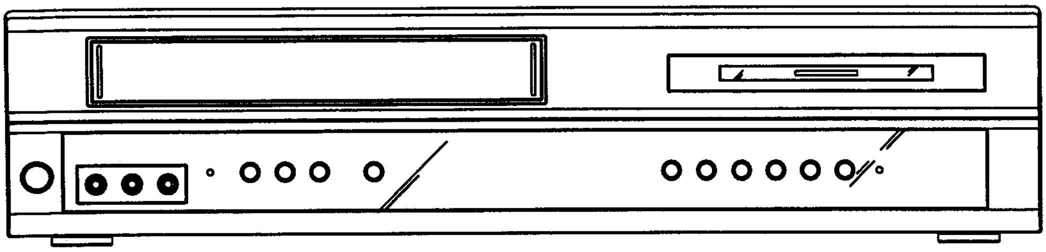
Schwalbe
Service & Versand GmbH

SERVICE MANUAL

ORION

HDR/VR-3001

HDD/VIDEO CASSETTE RECORDER



VHS

ORIGINAL
CHASSIS CODE A

Best. Nr. SM3001

Design and specifications are subject to change without notice.

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SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

3. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

4. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)

1. MODEL NUMBER and CHASSIS CODE
   The MODEL NUMBER can be found the back of eack product and CHASSIS CODE can be foind at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

GENERAL SPECIFICATIONS

G-1	**Outline of the product**				HDD Recorder & VHS Player/Recorder
G-2	**HDD System**	Video System			MPEG2 (VBR)
		Audio System			MPEG1 Layer 2
		HD Drive	Disc Size		3.5 inch
			Storage Capacity		80 GB
		Rec Time (Approx.)		LP	80 hours at 2Mbps
				SP	40 hours at 4Mbps
				HQ	26 hours at 6Mbps
		Picture Search			5x, 10x, 60x, 360x
		Stereo			Yes
		Rec Title		max	200
		Frame Advance			Yes
		Slow Speed (Approx.)			1/2,1/4,1/8
G-3	**VCR System**	System			VHS Player / Recorder
		Video System			PAL
		Hi-Fi Stereo			Yes
		NTSC PB (PAL60Hz)			Yes
		Deck		Deck	OVD-7
				Loading System	Front
				Motor	3
		Heads	Video Head		4Head
			FM Audio Head		2Head
			Audio /Control		Mono/Yes
			Erase (Full Track Erase)		Yes
		Tape Speed	Rec	PAL	SP/LP
				NTSC	--
			Play	PAL	SP/LP
				NTSC	SP
		Fast Forward / Rewind Time (Approx.) at +25oC			FF:1'12" / REW:1'12"
				with Cassette	E-180
		Forward/Reverse Picture Search		NTSC or PAL-M	SP= 3x, 5x
				PAL or SECAM	SP/LP= 5x, 7x / 7x, 13x
		Frame Advance			Yes
		Slow Speed			1/5, 1/10,1/30
G-4	**Tuning System**	Broadcasting System			CCIR System BG
		Tuner and Receive CH		System	1Tuner
				Destination	CCIR Hyper
				Tuning System	F-Synth
				Input Impedance	VHF/UHF 75 ohm
				CH Coverage	E2~E4, X~Z+2, S1~S10, E5~E12, S11~S41, E21~E69
		Intermediate Frequency		Picture (FP)	38.9 MHz
				Sound (FS)	33.4 MHz
				FP-FS	5.5 MHz
		Auto Tuning Method			ALL Band (Not C.C.I.R. CH Plan)
		Preset CH			80CH
		RF Converter Output			No
			Channel		--
			Level/Impedance		--
			Sound Selector		--
		Stereo/Dual TV Sound			Yes (G-ST)
		Tuner Sound Muting			Yes
G-5	**Power**	Power Source		AC	230V 50Hz
				DC	--
		Power Consumption			33.0 W
				Stand by	5.5 W
				Per Year	-- W
		Protector		Power Fuse	Yes
				Dew Sensor	No
G-6	**Regulation**			Safety	CE
				Radiation	CE
G-7	**Temperature**			Operation	5oC ~ 40oC
				Storage	-20oC ~ 60oC
G-8	**Operating Humidity**				Less than 80% RH

GENERAL SPECIFICATIONS

G-9	**Signal**	Video Signal		Input Level	1 V p-p / 75 ohm	
				Output Level	1 V p-p / 75 ohm	
				S/N Ratio (Weighted)	55dB	(HDD at HQ)
					53dB	(VCR at SP)
				Horizontal Resolution	280Lines	(HDD at HQ)
					240Lines	(VCR at SP)
		RGB Signal		Output Level	--	
		Audio Signal (0dB=0.775Vrms)		Input Level	-3.8dBm / 50k ohm	
				Output Level	-3.8dBm / 1k ohm	
				Digital Output Level	--	
			VCR Normal Audio	S/N Ratio at SP: More than	42dB	(Weighted)
				Harmonic Distortion at SP (1KHz) Typical	0.015	
				Frequency Response : at SP	100Hz - 10kHz	
				" : at LP	100Hz - 5kHz	
				: at SLP (EP)	--	
			VCR Hi-Fi Audio	Dynamic Range: More than	75 dB	
				Frequency Response	20Hz ~20kHz	
				Wow And Flutter: Less than	0.01 %Wrms	
				Channel Separation : More than	60 dB	
				Harmonic Distortion: Less than	0.01	
			HDD Audio	Dynamic Range: More than	85dB	
				Frequency Response	4Hz ~22kHz	
				S/N Ratio: More than	60dB	(CCIR-A: On)
				Harmonic Distortion: Less than	0.01	(30kHz LPF)
G-10	**On Screen Display**	Menu			Yes	
			Menu Type		Character	
			Timer Rec Set		Yes	
			VCR Extension	Copy HDD>>>VCR	Yes	
				Copy VCR>>>HDD	Yes	
				Audio Dubbing	Yes	
			VCR Setup	Audio Mix	Yes	
				Play Back Sharpness	Yes	
			Channel Setup	CH Tuning	Yes	
				Auto Tuning	Yes	
				Channel Mapping	Yes	
			System Setup	Clock Set	Yes	
				Language	Yes	
				AV2 (DEC/AV)	Yes	
			Time Shift		Yes	
		List Menu (HDD)			Yes	
			Recording Total Time, Number of Program, Remain		Yes	
			Program List		Yes	
			Program Info.	Thumbnail Display	Yes	
				Change Title (Thumbnail)	Yes	
				Change Genre / User	Yes	
				Auto Erase On/Off Set		No
				Program Erase Protection Setting	Yes	
			Program Edit	Program Play List	Yes	
				Easy Edit - Copy	Yes	
				Easy Edit - Join	Yes	
				Easy Edit - Divide	Yes	
				Easy Edit - Cut	Yes	
			Program Erase		Yes	
		G-CODE (or SHOWVIEW or PLUSCODE) No. Entry				No
		NICAM 1/2,NICAM Off, Audio Output				No
		Stereo, Audio Output, Bilingual			Yes	
		Play/Stop/FF/Rew/Rec/OTR/T-Rec/Pause/Eject/Tape In (Symbol Mark)			Yes	
		Others		CH/AV	Yes	
				Clock	Yes	
				Repeat	Yes	
				S-Repeat/SR-R/SR-Play		No
				A-B Repeat	Yes	
				Pin Code		No
				Tape Counter	Yes	
				Index	Yes	
				Hotel Lock		No
				Rec Mode	Yes	
				Zero Return	Yes	
				Manual Tracking (Bar Setting)	Yes	
				Hi-Fi	Yes	
				VPS		No
				PDC		No
				TEST Signal		No
				Copy Protect	Yes	
				VCR Mode/HDD Mode	Yes	
				Dubbing	Yes	
				Time Shift	Yes	
				Marker Jump		No

GENERAL SPECIFICATIONS

G-11	**OSD Language**		HDD OSD			Eng Ger Ita
			VCR OSD			Eng Ger Ita
G-12	**Clock, Timer and Timer Back-up**	Calendar				1990/1/1 ~ 2081/12/31
		Timer Events				15 Program/ 1 month
		One Touch Recording Max Time				6 hours
		OTPB Valid Time				No
		Timer Back-up (at Power Off Mode)				30min.
G-13	**Display**	Display				Yes
		Display Type				LED Module (Green, "Rec" & Timer symbol = Red)
			Clock/Counter, CH, Timer Rec, OTR, Play, Rec, FF (Cue), Rew (Rev), Stop, ATR, Eject			No
				VCR		Yes
				Clock		Yes (24h)
					AM	No
					PM	No
				Counter	VCR	Yes (hour: min)
					HDD	Yes (hour: min)
				Counter Remain		No
				Play	VCR	Yes
					HDD	Yes
				Stop		No
				Rec	VCR	Yes
					HDD	Yes
				FF/Cue		No
				REW/Review		No
				Pause	VCR	Yes
					HDD	No
				Still (Play Mark Flash)	VCR	Yes
					HDD	Yes
				OTR (Rec Mark Flash)	VCR	Yes
					HDD	Yes
				T-Rec		Yes
				Chapter		No
				Title		No
				Repeat		No
				Hi-Fi		No
				SP		No
				LP		No
				SLP		No
				CH		Yes
				RF Output CH		No
				Eject (Tape In Mark Flash)		Yes
				Tape In		Yes

GENERAL SPECIFICATIONS

G-14	**Remote Control**	Unit		RC-FY
		Glow in Dark Remocon		No
		Power Source	Voltage (D.C)	3V
			UM size x pcs	UM-3 x 2 pcs
		Total Keys		50 Keys
		Keys	Power	Yes
			Eject	Yes
			Program	Yes
			T-Rec	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0 / AV	Yes
			CH Up	Yes
			CH Down	Yes
			ATR	No
			Audio	Yes
			TV / VCR	Yes
			Call	Yes
			Counter Reset	Yes
			Clock / Counter	Yes
			Dubbing	Yes
			Thumbnail Set	Yes
			VCR	Yes
			HDD	Yes
			Menu	Yes
			HDD List	Yes
			Cancel	Yes
			Time Shift	Yes
			Up	Yes
			Down	Yes
			Left / Tracking -	Yes
			Right / Tracking +	Yes
			Enter / Select	Yes
			Play Stop	Yes
			Play	Yes
			Still	Yes
			Index- / Skip-	Yes
			Index+ / Skip+	Yes
			Search -	Yes
			Search +	Yes
			CM Skip (30+)	Yes
			Rec Stop	Yes
			Rec / OTR	Yes
			Slow	Yes
			Repeat	Yes
			Repeat A-B	Yes
			Rec Mode	Yes
			Zero Return	Yes
			CS Easy (IT)	Yes

GENERAL SPECIFICATIONS

G-15	**Features**	G-CODE (SHOWVIEW, VIDEO PLUS+)				No
		Forward/Reverse Picture Search			Yes	
		CS Easy [IT] (AV2 Only)			Yes	
		CM Skip [30+] (HDD:30sec Step, VCR:30sec x 6 Times)			Yes	
		Auto Power On			Yes	
		Auto Power Off				No
		HDD	Time Shift		Yes	
			Erase	All Erase	Yes	
				Title Erase	Yes	
			Divide Program		Yes	
			Combine Program		Yes	
			Protect Title		Yes	
			Program Dubbing		Yes	
		VCR	Auto Head Cleaning		Yes	
			Auto Tracking		Yes	
			HQ (VHS Standard High Quality)		Yes	
			Auto Play, Auto Rewind, Auto Eject		Yes	
			Index Search		Yes	
			SQPB			No
			ATS			No
			PDC			No
			VPS			No
			Channel Lock			No
			Hotel Lock			No
			Anti Theft			No
			Audio Dubbing		Yes	
			Remote Control Code 1/2			No
			BBE Audio			No
			Rec End Search			No
G-16	**Accessories**	Owner's Manual			Yes	
				Language	Ger	
				w/Guarantee Card	Yes	
		Remote Control Unit			Yes	
		Dew Caution Sheet				No
		Battery			Yes	
				UM size x pcs	UM-3 x 2 pcs	
		Tape Rewinder				No
		Safety Tip				No
		Toll Free Insert Sheet				No
		Quick Set-Up Sheet			Yes	
		Information Sheet			Yes	
		75 Ohm Coaxial Cable			Yes (0.9m)	
				type	Double shield	
		U/V Mixer				No
		DC Car Cord (Center+)				No
		Guarantee Card				No
		Warning Sheet				No
		Circuit Diagram				No
		Antenna Change Plug				No
		Service Facility List				No
		Important Safeguard				No
		Dew/AHC Caution Sheet				No
		AC Plug Adapter				No
		AC Cord				No
		AV Cord (2Pin-1Pin)				No
		Registration Card				No
		21pin Cable			Yes (Double Shield)	
		300 ohm to 75 ohm Antenna Adapter				No

GENERAL SPECIFICATIONS

G-17	**Interface**	Switch	Front	Power	Yes
				Play / Still	Yes
				Stop	Yes
				Fwd	Yes
				Rew	Yes
				Rec	Yes
				Rec Stop	Yes
				Rec Pause	No
				CH Up	Yes
				CH Down	Yes
				HDD / VCR	Yes
				Eject	Yes
				Enter	No
				Up	No
				Down	No
				Left	No
				Right	No
				CS Easy (IT)	No
				Time Shift	No
				Dubbing	No
			Rear	Attenuator	No
				Video/RGB Selector	No
				RF Out (Slide SW)	No
				Main Power SW	No
		Volume		Phones Volume	No
				MIC Volume	No
				Echo Volume	No
				Rec/OTR	No
		Terminals	Front	Video In	RCA x 1
				Audio In	RCA x 2 (Stereo)
			Rear	Video Output	No
				Audio Output	RCA x 2 (Stereo)
				Video Input	No
				Audio Input	No
				Euro Scart	2Scart
				Ext Speaker	No
				VHF/UHF Antenna Input/Output	DIN Type
				AC Inlet	No
		Indicator	LED	Power	No
				Rec	No
				T-Rec	No
				TV/VCR	No
				HDD	Yes (Red)
				VCR	Yes (Red)
				HDD Illumination	Yes (Blue)
				Surround	No
				Level Meter	No
G-18	**Set Size**			Approx. W x D x H (mm)	430.0 x 308.5 x 99.0
G-19	**Weight**			Net (Approx.)	4.8 kg (-- lbs)
				Gross (Approx.)	5.8 kg (-- lbs)
G-20	**Carton**		Master Carton		No
				Content	--- Sets
				Material	--- / ---
				Dimensions W x D x H (mm)	---
				Description of Origin	---
			Gift Box		Yes
				Material	Single/Full Color
				W/Color Photo Label	No
				Dimensions W x D x H (mm)	500 x 430 x 180
				Design	As Per BUYER 's
				Description of Origin	No
			Drop Test	Natural Dropping At	1Corner / 3Edges / 6Surfaces
				Height (cm)	80cm
			Container Stuffing		1,623 Sets / 40' container
G-21	**Material**		Cabinet	Front	PS 94HB
			PCB	Non-Halogen Demand	No
				Eyelet Demand	No

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

NOTE

1. Before removing of PCB for repair, unplug the AC cord.
2. Do not open the Hard Disc.
3. Avoid placing the Hard Disc subjected to vibrations or shocks.

1-1: TOP CABINET AND FRONT CABINET (Refer to Fig. 1-1)

1. Remove the 5 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Unlock the 8 supports ②.
4. Disconnect the following connector: (CP681).
5. Remove the Front Cabinet in the direction of arrow (B).

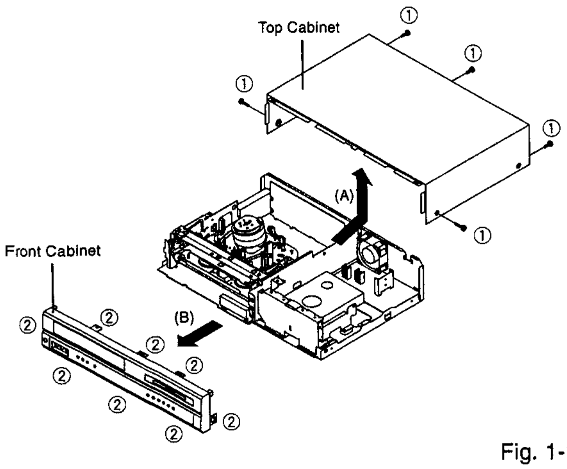

Top Cabinet
①
①
①
①
①
(A)
Front Cabinet
②
②
(B)
②
②
②
②
②
②

Fig. 1-1

1-2: OPERATION PCB AND LED PCB (Refer to Fig. 1-2)

1. Remove the 4 screws ①.
2. Remove the Operaion PCB and LED PCB in the direction of arrow.

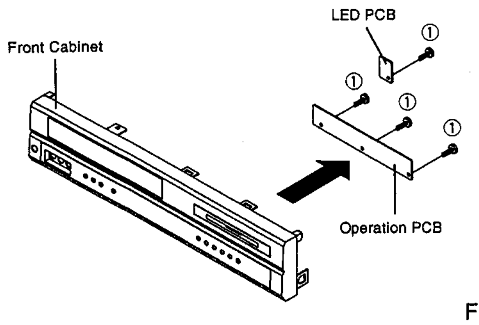

LED PCB
①
Front Cabinet
①
①
①
Operation PCB

Fig. 1-2

1-3: FLAP (Refer to Fig. 1-3)

1. Open Flap to 90° and flex in direction of arrow (A), at the same time slide in direction of arrow (B).
2. Then lift in direction of arrow (C).

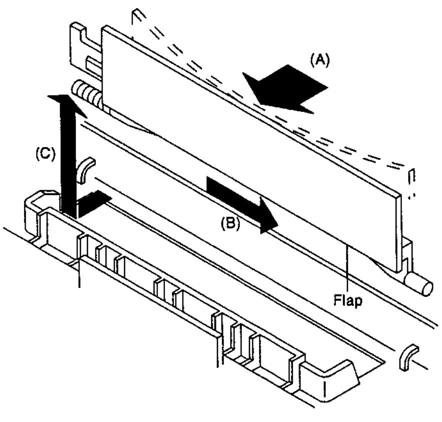


Fig. 1-3

1-4: HDD AND HD MPEG PCB (Refer to Fig. 1-4)

1. Remove the 2 screws ①.
2. Remove the Front Shield in the direction of arrow (A).
3. Remove the 4 screws ② and PVC Washer.
4. Disconnect the following connectors: (CN11, CN25 and CP504).
5. Remove the HDD Block in the direction of arrow (B).
6. Remove the 4 screws ③.
7. Disconnect the following connector: (CN20).
8. Remove the HD MPEG PCB in the direction of arrow (C).
9. Remove the 4 screws ④.
10. Remove the HDD Holder in the directions of arrow (D and E).

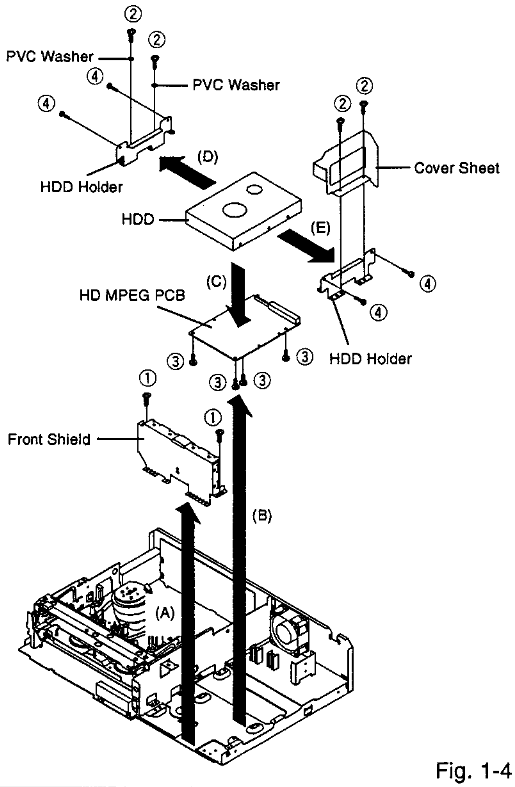

②
②
PVC Washer
④
PVC Washer
④
②
②
(D)
Cover Sheet
HDD Holder
HDD
(E)
④
(C)
HD MPEG PCB
④
③
③
HDD Holder
①
③
③
①
Front Shield
(B)
(A)

Fig. 1-4

DISASSEMBLY INSTRUCTIONS

1-5: POWER PCB (Refer to Fig. 1-5)

1. Remove the 2 screws ①.
2. Disconnect the following connector: (CP506).
3. Remove the Fan Motor in the direction of arrow (A).
4. Remove the 3 screws ②.
5. Disconnect the following connector: (CP1701).
6. Remove the Power PCB in the direction of arrow (B).

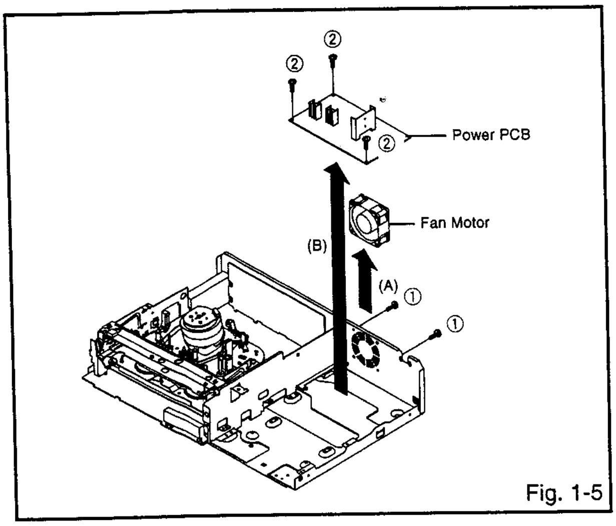

②
②
Power PCB
②
Fan Motor
(B)
(A)
①
①

Fig. 1-5

1-6: VCR DECK (Refer to Fig. 1-6)

1. Unlock the 2 supports ① and remove the Top Holder.
2. Remove the 3 screws ②.
3. Disconnect the following connectors: (CP101, CP102, CP103 and CP3001).
4. Remove the AC Head Cover and VCR Deck in the direction of arrow.

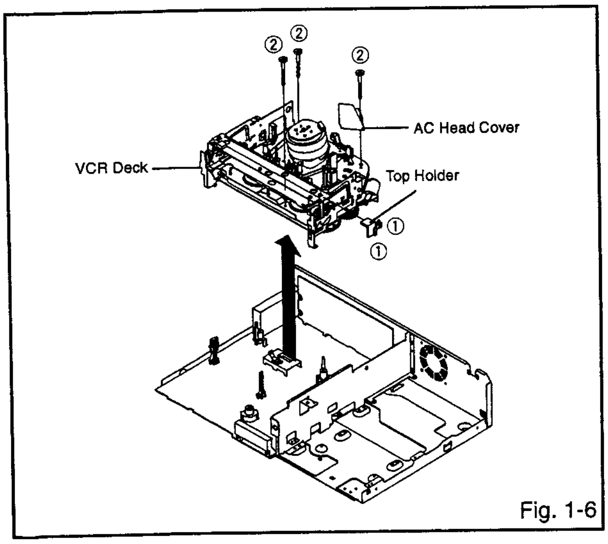

② ②
②
AC Head Cover
VCR Deck
Top Holder
①
①

Fig. 1-6

1-7: VCR PCB (Refer to Fig. 1-7)

1. Remove the screw ① and Fiber Washer.
2. Remove the 4 screws ②.
3. Remove the VCR PCB in the direction of arrow.

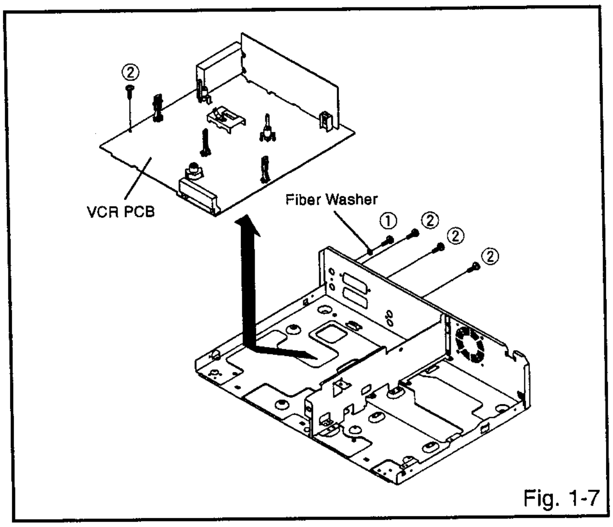

②
VCR PCB
Fiber Washer
① ②
②
②

Fig. 1-7

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF VCR DECK PARTS

2-1: TOP BRACKET (Refer to Fig. 2-1)

1. Extend the 2 supports ①.
2. Slide the 2 supports ② and remove the Top Bracket.

NOTE

1. After the installation of the Top Bracket, bend the support ① so that the Top Bracket is fixed.

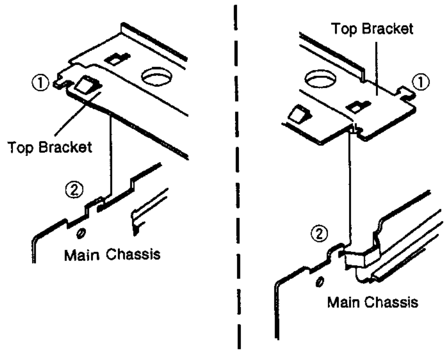

①
Top Bracket
②
Main Chassis
Top Bracket
①
②
Main Chassis

Fig. 2-1

2-2: CASSETTE HOLDER ASS'Y (Refer to Fig. 2-2)

1. Move the Cassette Holder Ass'y to the front side.
2. Push the Locker R to remove the Cassette Side R.
3. Remove the Cassette Side L.

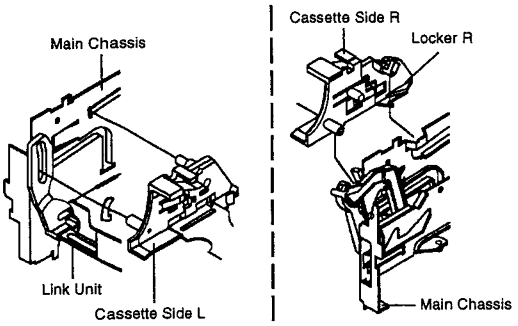

Main Chassis
Link Unit
Cassette Side L
Cassette Side R
Locker R
Main Chassis

Fig. 2-2

2-3: CASSETTE SIDE L/R (Refer to Fig. 2-3-A)

1. Remove the Locker Spring.
2. Unlock the 4 supports ① and then remove the Cassette Side L/R.
3. Unlock the support ② and then remove the Locker R.

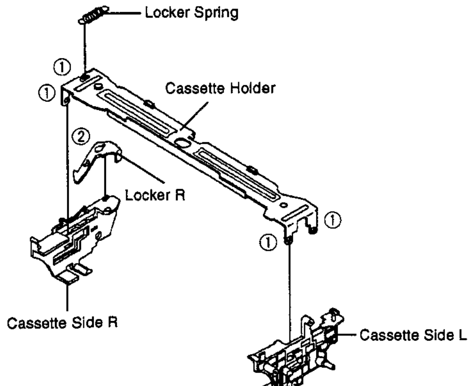

Locker Spring
①
①
Cassette Holder
②
Locker R
①
①
Cassette Side R
Cassette Side L

Fig. 2-3-A

NOTE

1. In case of the Locker R installation, check if the one position of Fig.2-3-B are correctly locked.
2. When you install the Cassette Side R, be sure to move the Locker R after installing.

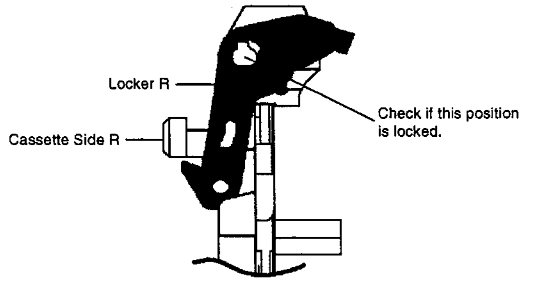

Locker R
Cassette Side R
Check if this position is locked.

Fig. 2-3-B

2-4: LINK UNIT (Refer to Fig. 2-4)

1. Set the Link Unit to the Eject position.
2. Unlock the support ①.
3. Remove the (A) side of the Link Unit first, then remove the (B) side.

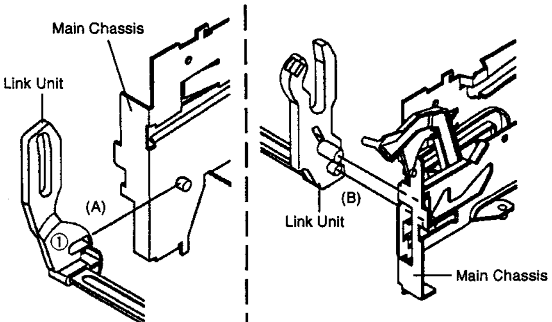

Main Chassis
Link Unit
(A)
①
(B)
Link Unit
Main Chassis

Fig. 2-4

2-5: LINK LEVER/FLAP LEVER (Refer to Fig. 2-5)

1. Extend the support ①.
2. Remove the Link Lever.
3. Remove the Flap Lever.

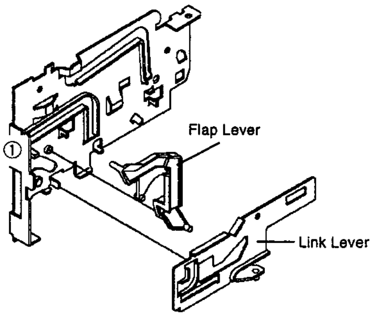
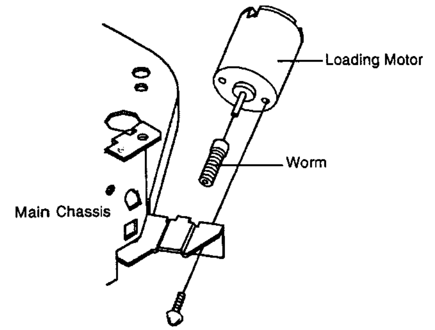

Flap Lever
①
Link Lever

Fig. 2-5

DISASSEMBLY INSTRUCTIONS

2-6: LOADING MOTOR/WORM (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Loading Motor.
3. Remove the Worm.


Loading Motor
Worm
Main Chassis
①

• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-6-A

NOTE

1. In case of the Worm installation, check if the value of the Fig. 2-6-B is correct.
2. In case of the Loading Motor installation, hook the wire on the Cassette Opener as shown Fig. 2-6-C.
3. When installing the wires between Capstan DD Unit and Loading Motor, connect them correctly as shown Fig. 2-6-D.

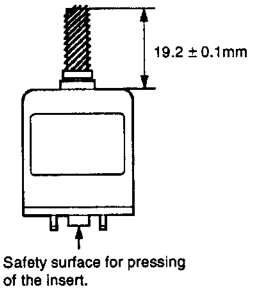

19.2 ± 0.1mm
Safety surface for pressing of the insert.

Fig. 2-6-B

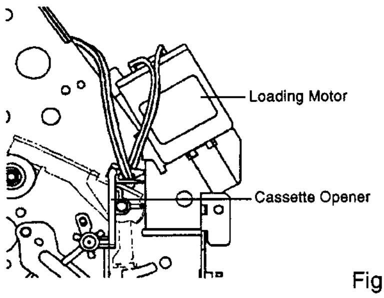

Loading Motor
Cassette Opener

Fig. 2-6-C

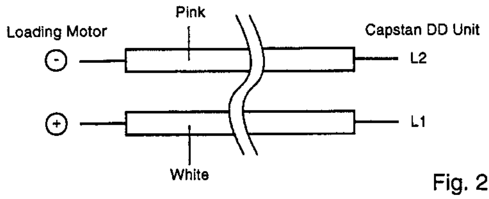

Loading Motor
Pink
Capstan DD Unit
⊖
L2
⊕
L1
White

Fig. 2-6-D

2-7: TENSION ASS'Y (Refer to Fig. 2-7-B)

1. Turn the Pinch Roller Cam clockwise so that the Tension Holder hook is set to the position of Fig. 2-7-A to move the Tension Arm Ass'y.
2. Remove the Tension Spring.
3. Unlock the 2 supports ① and remove the Tension Band.
4. Unlock the support ② and remove the Tension Arm Ass'y.
5. Unlock the support ③ and remove the Tension Connect.
6. Float the hook ④ and turn it clockwise then remove the Tension Holder.

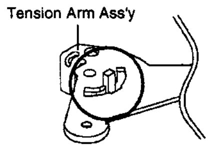

Tension Arm Ass'y

Fig. 2-7-A

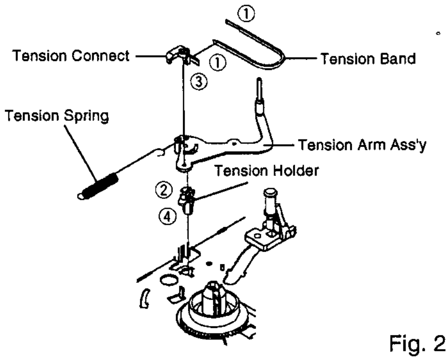

①
Tension Connect
①
Tension Band
③
Tension Spring
Tension Arm Ass'y
Tension Holder
②
④

Fig. 2-7-B

NOTE

1. In case of the Tension Band installation, note the direction of the installation. **(Refer to Fig. 2-7-C)**
2. In case of the Tension Band installation, install correctly as Fig. 2-7-D.
3. In case of the Tension Connect installation, install as the circled section of Fig. 2-7-E.

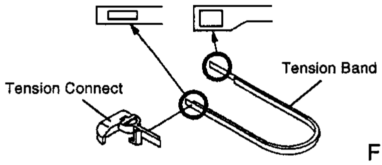

Tension Connect
Tension Band

Fig. 2-7-C

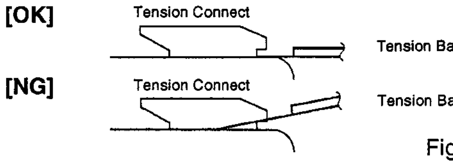

[OK]
Tension Connect
Tension Band
[NG]
Tension Connect
Tension Band

Fig. 2-7-D

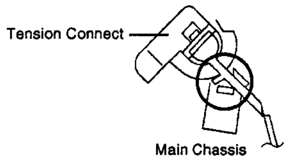

Tension Connect
Main Chassis

Fig. 2-7-E

DISASSEMBLY INSTRUCTIONS

2-8: T BRAKE ARM/T BRAKE BAND (Refer to Fig. 2-8-A)

1. Remove the T Brake Spring.
2. Turn the T Brake Arm clockwise and bend the hook section to remove it.
3. Unlock the 2 supports ① and remove the T Brake Band.

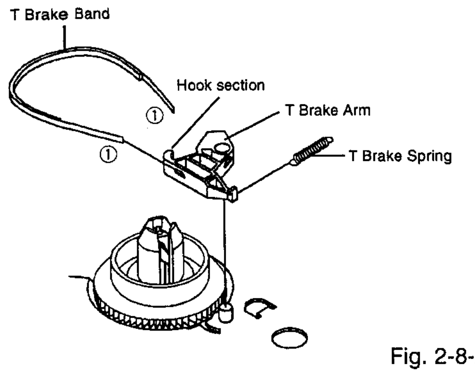

T Brake Band
Hook section
①
T Brake Arm
①
T Brake Spring

Fig. 2-8-A

NOTE

1. In case of the T Brake Band installation, install correctly as Fig. 2-8-B.

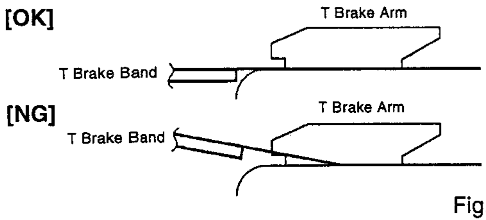

[OK]
T Brake Arm
T Brake Band
[NG]
T Brake Arm
T Brake Band

Fig. 2-8-B

2-9: S REEL/T REEL/IDLER ARM ASS'Y/IDLER GEAR (Refer to Fig. 2-9-A)

1. Remove the S Reel and T Reel.
2. Remove the 2 Polyslider Washers ①.
3. Remove the Idler Arm Ass'y and Idler Gear.

NOTE

1. Take care not to damage the gears of the S Reel and T Reel.
2. The Polyslider Washer may be remained on the back of the reel.
3. Take care not to damage the shaft.
4. Do not touch the section "A" of S Reel and T Reel. (Use gloves.) **(Refer to Fig. 2-9-A)** Do not adhere the stains on it.
5. When you install the reel, clean the shaft and grease it (FG-84M). (If you do not grease, noise may be heard in FF/REW mode.)
6. After installing the reel, adjust the height of the reel. **(Refer to MECHANICAL ADJUSTMENT)**

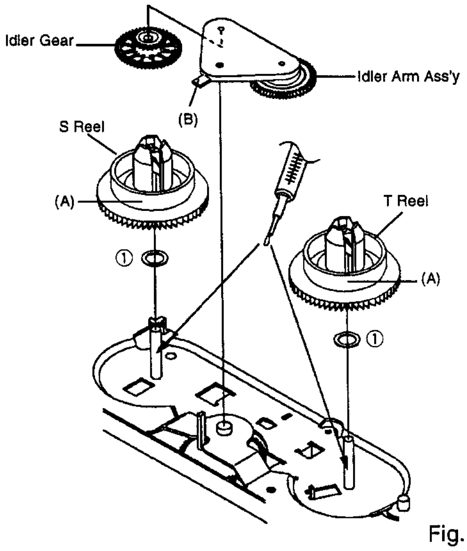

Idler Gear
Idler Arm Ass'y
S Reel
(B)
(A)
T Reel
①
(A)
①

Fig. 2-9-A

NOTE

1. In case of the S Reel and T Reel installation, check if the correct parts are installed. **(Refer to Fig. 2-9-B)**
2. In case of the Idler Arm Ass'y installation, install correctly as Fig. 2-9-C. And also set it so that the section "B" of Fig. 2-9-A is placed under the Main Chassis tab.

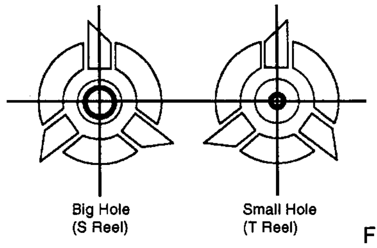

Big Hole
(S Reel)
Small Hole
(T Reel)

Fig. 2-9-B

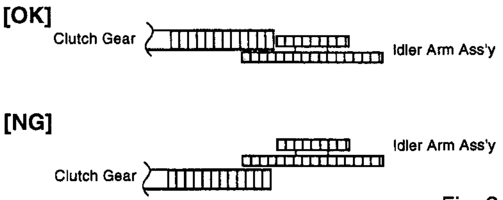

[OK]
Clutch Gear
Idler Arm Ass'y
[NG]
Idler Arm Ass'y
Clutch Gear

Fig. 2-9-C

DISASSEMBLY INSTRUCTIONS

2-10: CASSETTE OPENER/PINCH ROLLER BLOCK/ P5 ARM ASS'Y (Refer to Fig. 2-10-A)

1. Unlock the support ① and remove the Cassette Opener.
2. Remove the Pinch Roller Block and P5 Arm Ass'y.

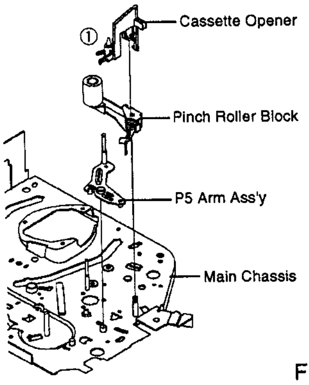

①
Cassette Opener
Pinch Roller Block
P5 Arm Ass'y
Main Chassis

Fig. 2-10-A

NOTE

1. Do not touch the Pinch Roller. (Use gloves.)
2. In case of the Pinch Roller Block and the Pinch Roller Cam installation, install correctly as Fig. 2-10-B.

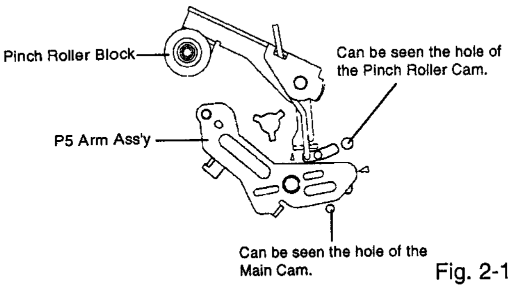

Pinch Roller Block
Can be seen the hole of the Pinch Roller Cam.
P5 Arm Ass'y
Can be seen the hole of the Main Cam.

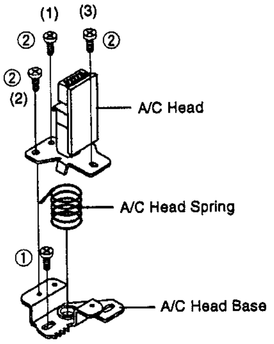
Fig. 2-10-B

2-11: A/C HEAD (Refer to Fig. 2-11-A)

1. Remove the screw ①.
2. Remove the A/C Head Base.
3. Remove the 3 screws ②.
4. Remove the A/C Head and A/C Head Spring.

NOTE

1. Do not touch the A/C Head. (Use gloves.)
2. When you install the A/C Head Spring, install as shown in Fig. 2-11-B.
3. When you install the A/C Head, tighten the screw (1) first, then tighten the screw (2), finally tighten the screw (3).


(1)
(3)
②
②
②
(2)
A/C Head
A/C Head Spring
①
A/C Head Base

• Screw Torque: 5 ± 0.5kgf•cm (Screw ①)

Fig. 2-11-A

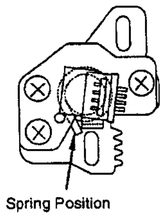
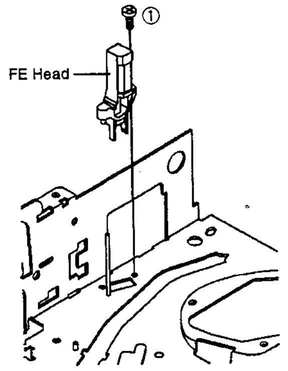

Spring Position

Fig. 2-11-B

2-12: FE HEAD (RECORDER ONLY) (Refer to Fig. 2-12)

1. Remove the screw ①.
2. Remove the FE Head.



• Screw Torque: 5 ± 0.5kgf•cm
• The FE Head is not installed on the Video Cassette Player.

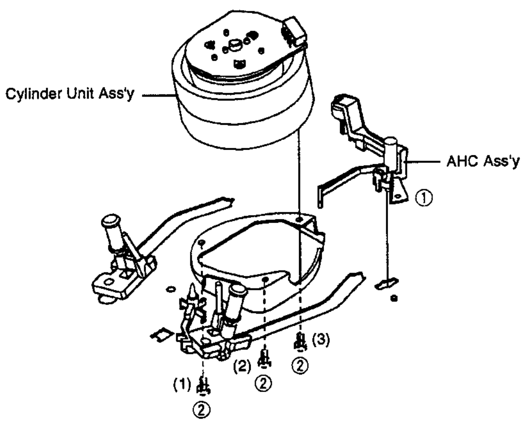
Fig. 2-12

2-13: AHC ASS'Y/CYLINDER UNIT ASS'Y (Refer to Fig. 2-13)

1. Unlock the support ① and remove the AHC Ass'y.
2. Disconnect the following connector: (CD2001)
3. Remove the 3 screws ②.
4. Remove the Cylinder Unit Ass'y.

NOTE

1. When you install the Cylinder Unit Ass'y, tighten the screws from (1) to (3) in order while pulling the Ass'y toward the left front direction.


Cylinder Unit Ass'y
AHC Ass'y
①
(3)
(2)
②
(1)
②
②

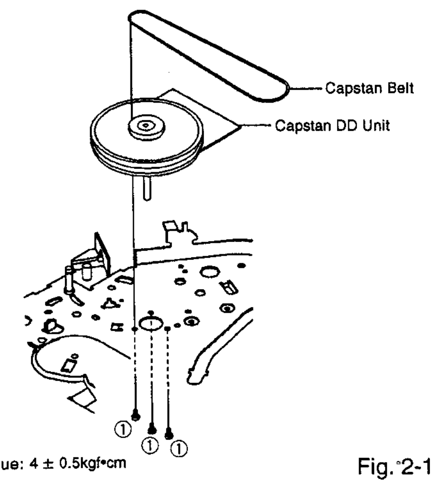
• Screw Torque: 3 ± 0.5kgf•cm

Fig. 2-13

DISASSEMBLY INSTRUCTIONS

2-14: CAPSTAN DD UNIT (Refer to Fig. 2-14-A)

1. Remove the Capstan Belt.
2. Remove the 3 screws ①.
3. Remove the Capstan DD Unit.


Capstan Belt
Capstan DD Unit
①
①
①

• Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-14-A

NOTE

1. In case of the Capstan DD Unit installation, apply the silicon bond (TSE3843-W) on the position Fig. 2-14-B correctly. (If no silicon bond applied, abnormal noise will be heard on the deck operation.)
   (Refer to Fig. 2-14-B, C)

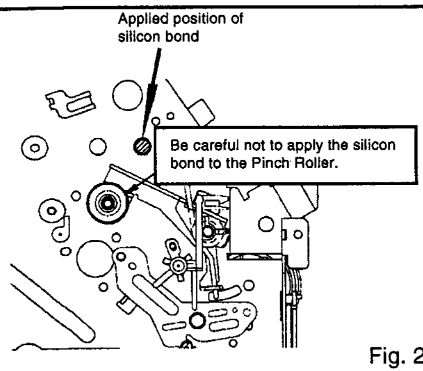

Applied position of silicon bond
Be careful not to apply the silicon bond to the Pinch Roller.

Fig. 2-14-B

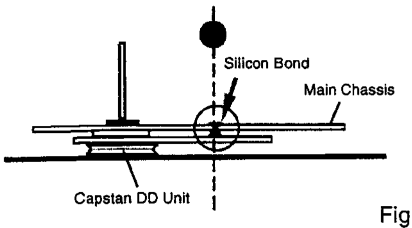

Silicon Bond
Main Chassis
Capstan DD Unit

Fig. 2-14-C

2-15: MAIN CAM/PINCH ROLLER CAM/JOINT GEAR (Refer to Fig. 2-15-A)

1. Remove the E-Ring ①, then remove the Main Cam.
2. Remove the E-Ring ②, then remove the Pinch Roller Cam and Joint Gear.

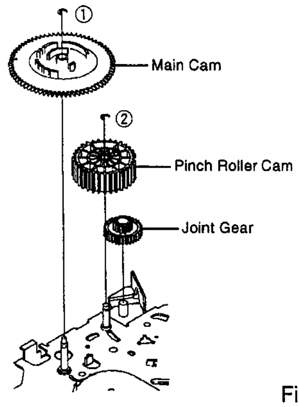

①
Main Cam
②
Pinch Roller Cam
Joint Gear

Fig. 2-15-A

NOTE

1. In case of the Pinch Roller Cam and Main Cam installation, install them as the circled section of Fig. 2-15-B so that the each markers are met. **(Refer to Fig. 2-15-B)**

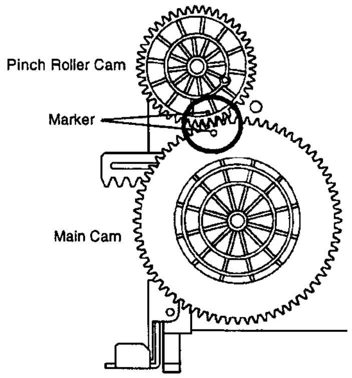

Pinch Roller Cam
Marker
Main Cam

Fig. 2-15-B

2-16: LOADING GEAR S/T UNIT (Refer to Fig. 2-16-A)

1. Remove the E-Ring ① and remove the Main Loading Gear.
2. Remove the Main Rod, Tension Lever, Loading Arm S Unit and Loading Arm T Unit.

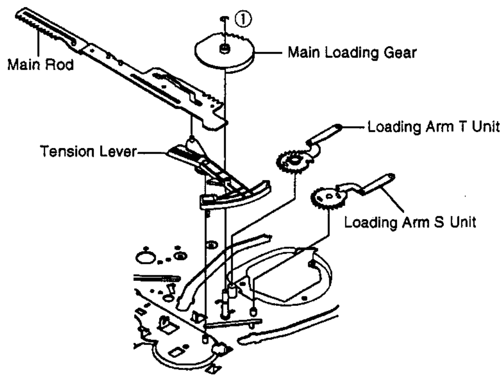

①
Main Loading Gear
Main Rod
Loading Arm T Unit
Tension Lever
Loading Arm S Unit

Fig. 2-16-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. When you install the Loading Arm S Unit, Loading Arm T Unit and Main Loading Gear, align each marker. **(Refer to Fig. 2-16-B)**

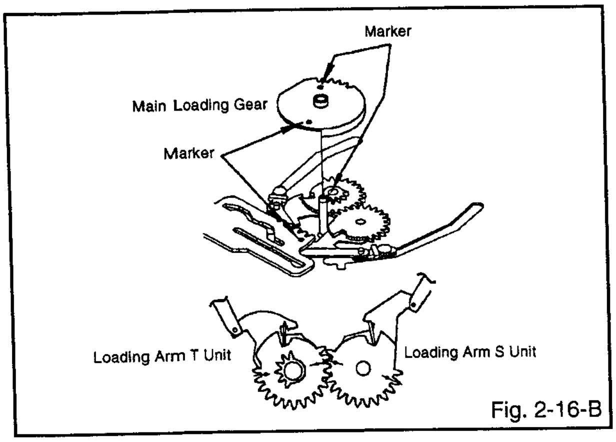

Marker
Main Loading Gear
Marker
Loading Arm T Unit
Loading Arm S Unit

Fig. 2-16-B

2-17: CLUTCH ASS'Y/RING SPRING/CLUTCH LEVER/ CLUTCH GEAR (Refer to Fig. 2-17-A)

1. Remove the Polyslider Washer ①.
2. Remove the Clutch Ass'y and Ring Spring.
3. Remove the Clutch Lever.
4. Remove the Coupling Gear, Coupling Spring and Clutch Gear.

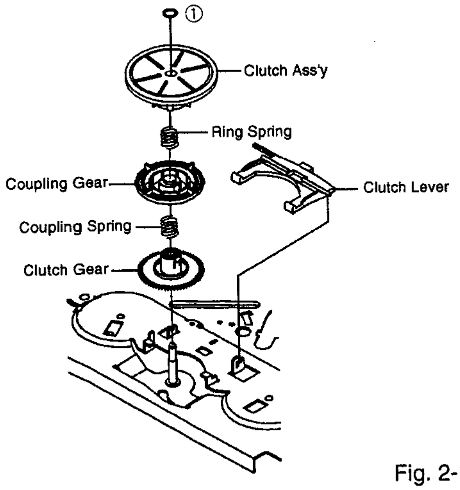

①
Clutch Ass'y
Ring Spring
Coupling Gear
Clutch Lever
Coupling Spring
Clutch Gear

Fig. 2-17-A

NOTE

1. In case of the Clutch Ass'y installation, install it with inserting the spring of the Clutch Ass'y into the dent of the Coupling Gear. **(Refer to Fig. 2-17-B)**

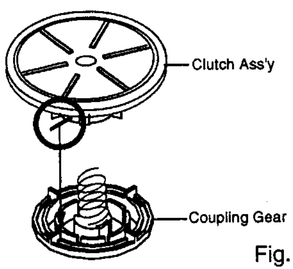

Clutch Ass'y
Coupling Gear

Fig. 2-17-B

2-18: CASSETTE GUIDE POST/INCLINED BASE S/T UNIT/P4 CAP (Refer to Fig. 2-18-A)

1. Remove the P4 Cap.
2. Unlock the support ① and remove the Cassette Guide Post.
3. Remove the Inclined Base S Unit and Inclined Base T Unit.

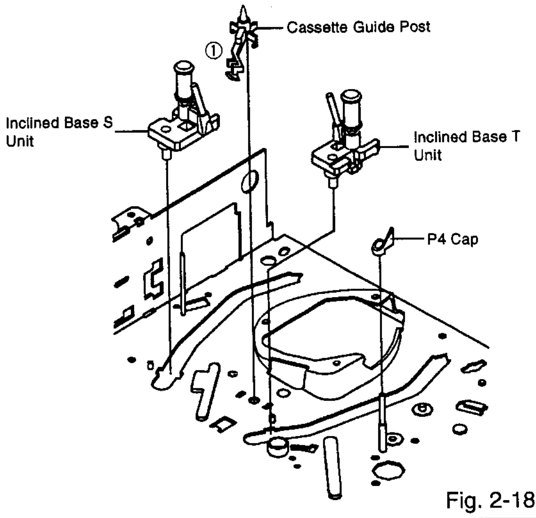

Cassette Guide Post
①
Inclined Base S Unit
Inclined Base T Unit
P4 Cap

Fig. 2-18-A

NOTE

1. Do not touch the roller of Guide Roller.
2. In case of the P4 Cap installation, install it with parallel for "A" and "B" of Fig. 2-18-B.
3. In case of the Cassette Guide Post installation, install correctly as the circled section of Fig. 2-18-C.

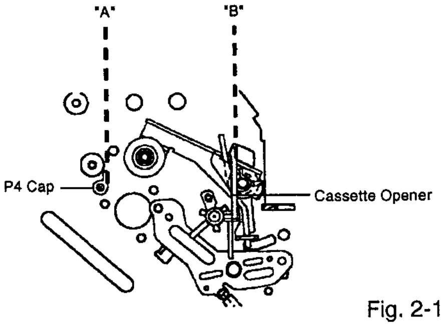

"A"
"B"
P4 Cap
Cassette Opener

Fig. 2-18-B

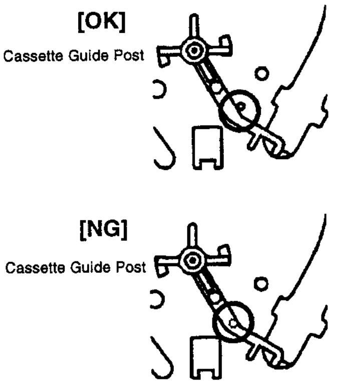

[OK]
Cassette Guide Post
[NG]
Cassette Guide Post

Fig. 2-18-C

DISASSEMBLY INSTRUCTIONS

3. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 3-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

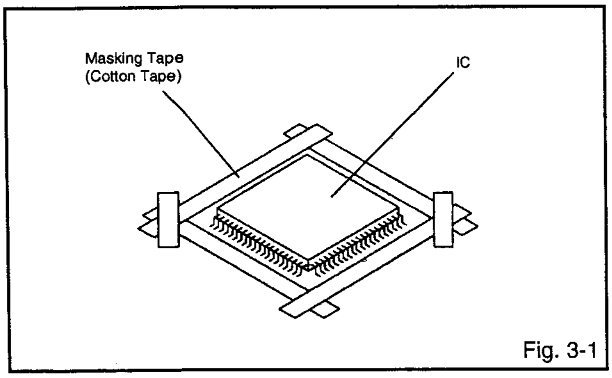

Masking Tape
(Cotton Tape)
IC

Fig. 3-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 3-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

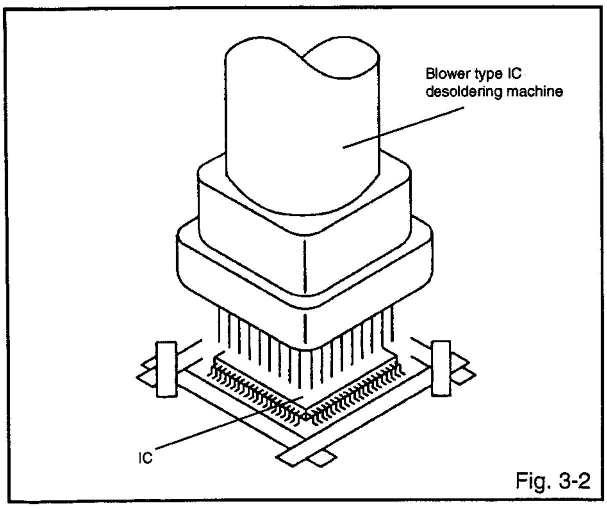

Blower type IC desoldering machine
IC

Fig. 3-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 3-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

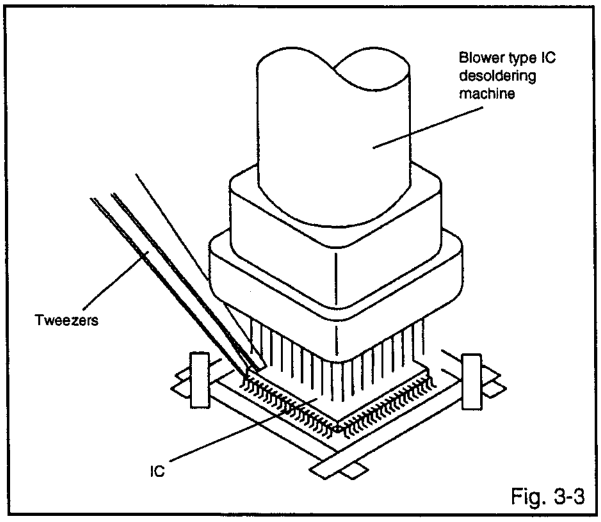

Blower type IC desoldering machine
Tweezers
IC

Fig. 3-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 3-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

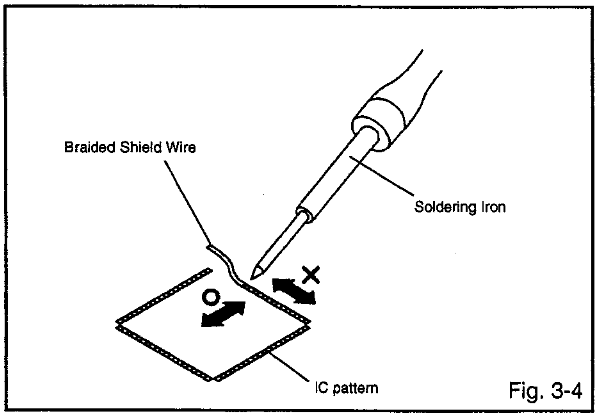

Braided Shield Wire
Soldering Iron
O
X
IC pattern

Fig. 3-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 3-5.)**

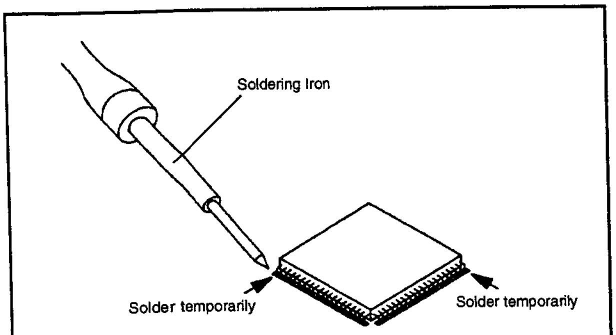

Soldering Iron
Solder temporarily
Solder temporarily

Fig. 3-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 3-6.)**

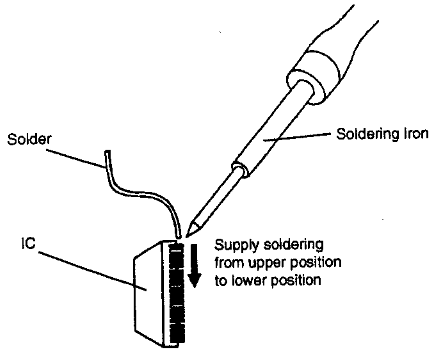

Solder
Soldering Iron
IC
Supply soldering from upper position to lower position

Fig. 3-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 3-7.)**

NOTE

Do not absorb the solder to excess.

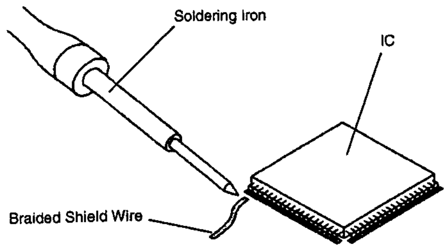

Soldering Iron
IC
Braided Shield Wire

Fig. 3-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 3-8.)**

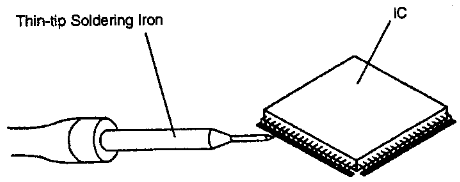

Thin-tip Soldering Iron
IC

Fig. 3-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, be always sure to replace the IC in this case.

KEY TO ABBREVIATIONS

A	**A/C**	Audio/Control
	ACC	Automatic Color Control
	AE	Audio Erase
	AFC	Automatic Frequency Control
	AFT	Automatic Fine Tuning
	AFT DET	Automatic Fine Tuning Detect
	AGC	Automatic Gain Control
	AMP	Amplifier
	ANT	Antenna
	A.PB	Audio Playback
	APC	Automatic Phase Control
	ASS'Y	Assembly
	AT	All Time
	AUTO	Automatic
	A/V	Audio/Video
B	**BGP**	Burst Gate Pulse
	BOT	Beginning of Tape
	BPF	Bandpass Filter
	BRAKE SOL	Brake Solenoid
	BUFF	Buffer
	B/W	Black and White
C	**C**	Capacitance, Collector
	CASE	Cassette
	CAP	Capstan
	CARR	Carrier
	CH	Channel
	CLK	Clock
	CLOCK (SY-SE)	Clock (Syscon to Servo)
	COMB	Combination, Comb Filter
	CONV	Converter
	CPM	Capstan Motor
	CTL	Control
	CYL	Cylinder
	CYL-M	Cylinder-Motor
	CYL SENS	Cylinder-Sensor
D	**DATA (SY-CE)**	Data (Syscon to Servo)
	dB	Decibel
	DC	Direct Current
	DD Unit	Direct Drive Motor Unit
	DEMOD	Demodulator
	DET	Detector
	DEV	Deviation
E	**E**	Emitter
	EF	Emitter Follower
	EMPH	Emphasis
	ENC	Encoder
	ENV	Envelope
	EOT	End of Tape
	EQ	Equalizer
	EXT	External
F	**F**	Fuse
	FBC	Feed Back Clamp
	FE	Full Erase
	FF	Fast Forward, Flipflop
	FG	Frequency Generator
	FL SW	Front Loading Switch
	FM	Frequency Modulation
	FSC	Frequency Sub Carrier
	FWD	Forward
G	**GEN**	Generator
	GND	Ground
H	**H.P.F**	High Pass Filter
	H.SW	Head Switch
	Hz	Hertz
I	**IC**	Integrated Circuit
	IF	Intermediate Frequency
	IND	Indicator
	INV	Inverter
K	**KIL**	Killer
L	**L**	Left
	LED	Light Emitting Diode
	LIMIT AMP	Limiter Amplifier
	LM, LDM	Loading Motor
	LP	Long Play
	L.P.F	Low Pass Filter
	LUMI.	Luminance
M	**M**	Motor
	MAX	Maximum
	MINI	Minimum
	MIX	Mixer, mixing
	MM	Monostable Multivibrator
	MOD	Modulator, Modulation
	MPX	Multiplexer, Multiplex
	MS SW	Mecha State Switch
N	**NC**	Non Connection
	NR	Noise Reduction
O	**OSC**	Oscillator
	OPE	Operation
P	**PB**	Playback
	PB CTL	Playback Control
	PB-C	Playback-Chrominance
	PB-Y	Playback-Luminance
	PCB	Printed Circuit Board
	P. CON	Power Control
	PD	Phase Detector
	PG	Pulse Generator
	P-P	Peak-to Peak
R	**R**	Right
	REC	Recording
	REC-C	Recording-Chrominance
	REC-Y	Recording-Luminance
	REEL BRK	Reel Brake
	REEL S	Reel Sensor
	REF	Reference
	REG	Regulated, Regulator
	REW	Rewind
	REV, RVS	Reverse
	RF	Radio Frequency
	RMC	Remote Control
	RY	Relay
S	**S. CLK**	Serial Clock
	S. COM	Sensor Common
	S. DATA	Serial Data
	SEG	Segment
	SEL	Select, Selector
	SENS	Sensor
	SER	Search Mode
	SI	Serial Input
	SIF	Sound Intermediate Frequency
	SO	Serial Output
	SOL	Solenoid
	SP	Standard Play
	STB	Serial Strobe
	SW	Switch

KEY TO ABBREVIATIONS

S	**SYNC**	Synchronization
	SYNC SEP	Sync Separator, Separation
T	**TR**	Transistor
	TRAC	Tracking
	TRICK PB	Trick Playback
	TP	Test Point
U	**UNREG**	Unregulated
V	**V**	Volt
	VCO	Voltage Controlled Oscillator
	VIF	Video Intermediate Frequency
	VP	Vertical Pulse, Voltage Display
	V.PB	Video Playback
	VR	Variable Resistor
	V.REC	Video Recording
	VSF	Visual Search Fast Forward
	VSR	Visual Search Rewind
	VSS	Voltage Super Source
	V-SYNC	Vertical-Synchronization
	VT	Voltage Tuning
X	**X'TAL**	Crystal
Y	**Y/C**	Luminance/Chrominance

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit or on the main unit and on the remote control for more than a standard time (second).

Set Key	Set Key	Standard Time (seconds)	Operations
CH UP	FF	2	The operation total hours of Hard Disc and the playback/recording total hours of the VCR will be displayed on the TV Monitor. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
CH UP	STOP	2	Adjust the PG SHIFTER automatically. Refer to the "ELECTRICAL ADJUSTMENT" (PG SHIFTER).
CH DOWN	REC STOP	2	Initialization of the factory on HDD and VCR. NOTE: Do not use this for the normal servicing. If you set a factory initialization, all the data in the Hard Disc will be deleted. The clock setting, channel setting, and the operation total hours of the Hard Disc and the VCR will be reset.
REC STOP	FF	2	Adjust the SEPARATION. Refer to the "ELECTRICAL ADJUSTMENT" (SEPARATION).
CH UP	REC	2	Moving to the SERVICE MODE. Refer to the "PREPARATION FOR SERVICING"

Set Key	Remocon Key	Standard Time (seconds)	Operations
STOP	7	2	Hard Disc Format. Refer to the "HARD DISC FORMAT" NOTE: While pressing the Remocon Key for more than the Standard Time, press the Set Key simultaneously.

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage.
Parts replacing time does not mean the life span for individual parts.
Also, long term storage or misuse may cause transformation and aging of rubber parts.
The following list means standard hours, so the checking hours depends on the conditions.

Time / Parts Name	500 hours	1,000 hours	1,500 hours	2,000 hours	2,500 hours	Notes
Audio Control Head	■	■	■	●	●	Clean those parts in contact with the tape.
Full Erase Head (Recorder only)	■	■	■	●	●	
Capstan Belt		●	●	●	●	Clean the rubber, and parts which the rubber touches.
Pinch Roller	■	●	●	●	●	
Capstan DD Unit		●	●	●	●	
Loading Motor					●	
Tension Band		●	●	●	●	
T Brake Band		●	●	●	●	
Clutch Ass'y		●	●	●	●	
Idler Arm Ass'y		●	●	●	●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	●	●	●	●	Clean the Head

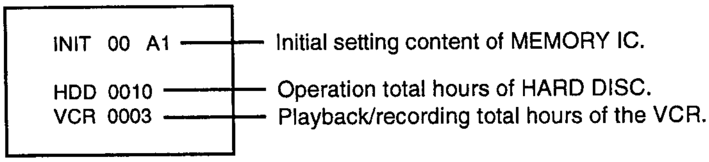
■ : Clean
● : Check it and if necessary, replace it.

CONFIRMATION OF HOURS USED

The operation total hours of Hard Disc and the playback/recording total hours of the VCR can be checked on the TV Monitor. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
   The **Fig. 1** appear on the TV Monitor.
4. Calculate the total hours according to the formula.
5. After the confirmation of using hours, turn off the power.



```
INIT 00 A1
HDD 0010
VCR 0003
```

Initial setting content of MEMORY IC.
Operation total hours of HARD DISC.
Playback/recording total hours of the VCR.

Fig.1

(16 x 16 x 16 x thousands digit value) + (16 x 16 x hundreds digit value) + (16 x tens digit value) + (ones digit value)

PREVENTIVE CHECKS AND SERVICE INTERVALS

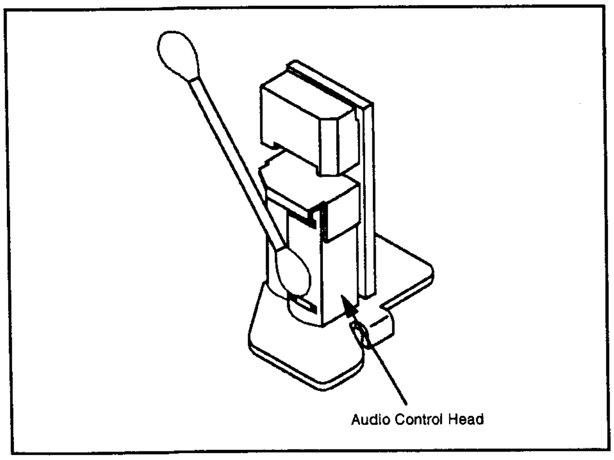
CLEANING

NOTE

After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

Clean the Audio Control Head with the cotton stick soaked by alcohol. Clean the full erase head in the same manner. **(Refer to the figure below.)**



2. TAPE RUNNING SYSTEM

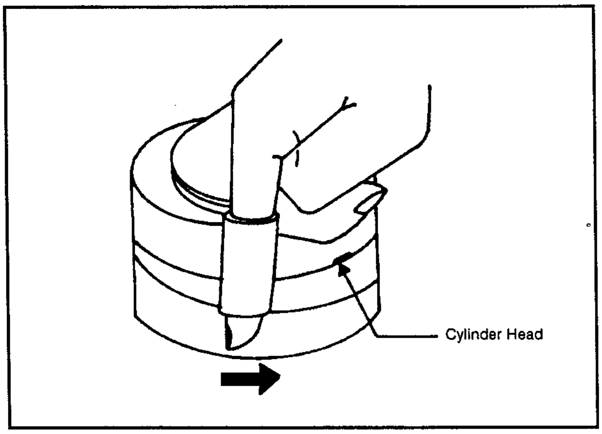
When cleaning the tape transport system, use the gauze moistened with isopropyl alcohol.

3. CYLINDER

Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol. Hold it to the cylinder head softly. Turn the cylinder head counterclockwise to clean it (in the direction of the arrow). **(Refer to the figure below.)**

NOTE

Do not exert force against the cylinder head. Do not move the chamois upward or downward on the head.
Use the chamois one by one.



WHEN REPLACING EEPROM (MEMORY) IC

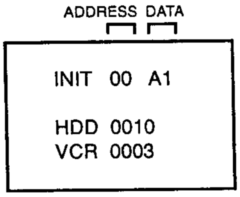
If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: No need setting for after INI 4E.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	A1	C1	70	44	2E	00	20	AF	98	95	8A	1B	2A	09	29	13
10	44	84	08	34	34	4A	A7	59	9F	3A	00	0D	BF	10	F1	EA
20	10	70	52	25	63	5B	76	5E	08	F8	01	F3	5F	09	F0	05
30	F3	2B	B7	C2	42	00	00	00	00	00	00	00	00	00	00	00
40	00	00	00	AF	00	40	0C	03	A2	64	01	21	01	6D	4E	---

Table 1

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. Press both CH UP button on the set and the FF button on the set for more than 2 seconds.
   ADDRESS and DATA will appear on TV Monitor as **Fig 1**.



INIT 00 A1

HDD 0010
VCR 0003

Fig. 1

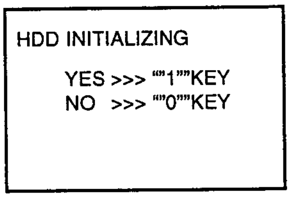
4. ADDRESS is now selected and should “blink”. Using the Tracking + or - button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press ENTER to select DATA. When DATA is selected, it will “blink”.
6. Again, step through the DATA using Tracking + or - button until required DATA value has been selected.
7. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 7 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

The unit will now have the correct DATA for the new MEMORY IC.

HARD DISC FORMAT

If you do the Hard Disc format, all the data will be deleted.
So, before the format, important picture should be copied on the tape.

1. Connect the set to TV Monitor.
2. Turn on the POWER.
3. While pressing the (7) button on the remote control, press the STOP button on the set simultaneously for more than 2 seconds.
   The initializing screen will appear on TV Monitor as **Fig 2.**
4. Press the (1) button on the remote control.
5. Hard Disc format will be completed in approx. 10 seconds.

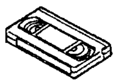
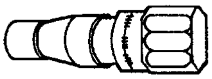
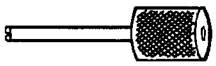
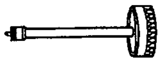
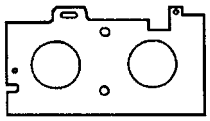
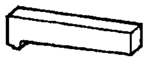
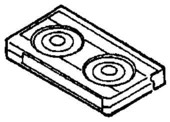
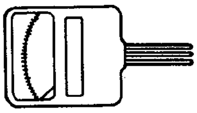


HDD INITIALIZING

YES >>> ""1""KEY
NO >>> ""0""KEY

Fig. 2

SERVICING FIXTURES AND TOOLS

(For 2 head 1 speed model, 4 head model) VHS Alignment Tape JG001E (VP$_1$S-LI6^3) JG001F (VP$_1$S-CO1^3) JG001R (VP$_1$S-LI6^{3}H) JG001U (VP$_1$S-X6^3) 	**(For 2 head 2 speed model)** VHS Alignment Tape JG001C (VP$_2$S-LI6^3) JG001D (VP$_2$S-CO1^3) JG001V (VP$_2$S-X6^3) 	JG002B Adapter JG002E Dial Torque Gauge (10~90gf•cm) JG002F (60~600gf•cm) 	JG005 Post Adjustment Screwdriver Part No. SV-TG0-030-000 (small) 
JG153 X Value Adjustment Screwdriver 	JG022 Master Plane 	JG024A Reel Disk Height Adjustment Jig 	JG100A Torque Tape (VHT-063) 
Tentelometer 			

Ref. No.	Part No.	Parts Name	Remarks
JG001E	APJG001E00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 1 speed model, 4 head model)**
JG001F	APJG001F00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 1 speed model, 4 head model)**
JG001R	APJG001R00	VHS Alignment Tape	Hi-Fi Audio **(For Hi-Fi model)**
JG001U	APJG001U00	VHS Alignment Tape	X Value Adjustment **(For 2 head 1 speed model, 4 head model)**
JG001C	APJG001C00	VHS Alignment Tape	Monoscope, 6KHz **(For 2 head 2 speed model)**
JG001D	APJG001D00	VHS Alignment Tape	Color Bar, 1KHz **(For 2 head 2 speed model)**
JG001V	APJG001V00	VHS Alignment Tape	X Value Adjustment **(For 2 head 2 speed model)**
JG002B	APJG002B00	Adapter	VSR Torque, Brake Torque (S Reel/T Reel Ass'y)
JG002E	APJG002E00	Dial Torque Gauge (10~90gf•cm)	Brake Torque (T Reel Ass'y)
JG002F	APJG002F00	Dial Torque Gauge (60~600gf•cm)	VSR Torque, Brake Torque (S Reel)
JG005	APJG005000	Post Adjustment Screwdriver	Guide Roller Adjustment
JG153	APJG153000	X Value Adjustment Screwdriver	X Value Adjustment
JG022	APJG022000	Master Plane	Reel Disk Height Adjustment
JG024A	APJG024A00	Reel Disk Height Adjustment Jig	Reel Disk Height Adjustment
JG100A	APJG100A00	Torque Tape (VHT-063)	Playback Torque, Back Tension Torque During Playback
JG154	APJG154000	Cable	Used to connect the test point of SERVICE and GROUND

PREPARATION FOR SERVICING

The method of the moving to the SERVICE MODE.

1. Press both CH UP button on the set and the REC button on the set for more than 2 seconds. (The BOT, EOT, and the Reel Sensor do not work and the VCR deck can be operated without a cassette tape.)
2. In case of using a cassette tape, press the EJECT button to insert or eject a cassette tape.

MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTES before starting work.

- Place an object which weighs between 450g~500g on the Cassette Tape to keep it steady when you want to make the tape run without the Cassette Holder. (Do not place an object which weighs over 500g.)

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane **(JG022)** and reel disk height adjustment jig **(JG024A)** on the mechanism framework, taking care not to scratch the drum, as shown in **Fig. 1-1-A.**
3. While turning the reel and confirm the following points. Check if the surface "A" of reel disk is lower than the surface "B" of reel disk height adjustment jig **(JG024A)** and is higher than the surface "C". If it is not passed, place the height adjustment washers and adjust to 10(+2, -0)mm.
4. Adjust the other reel in the same way.

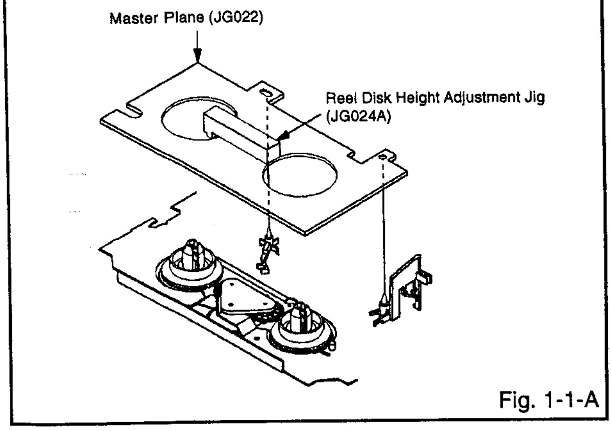

Master Plane (JG022)
Reel Disk Height Adjustment Jig (JG024A)

Fig. 1-1-A

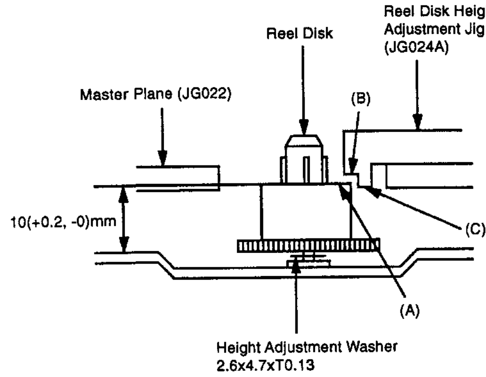

Reel Disk
Reel Disk Height Adjustment Jig (JG024A)
Master Plane (JG022)
(B)
10(+0.2, -0)mm
(C)
(A)
Height Adjustment Washer
2.6x4.7xT0.13
2.6X4.7xT0.25

Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Set to the PLAY mode.
2. Adjust the adjusting section for the Tension Arm position so that the Tension Arm top is within the standard line of Main Chassis.
3. While turning the S Reel clockwise, confirm that the edge of the Tension Arm is located in the position described above.

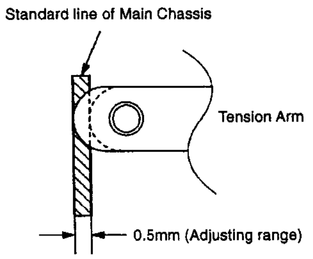

Standard line of Main Chassis
Tension Arm
0.5mm (Adjusting range)

Fig. 1-2-A

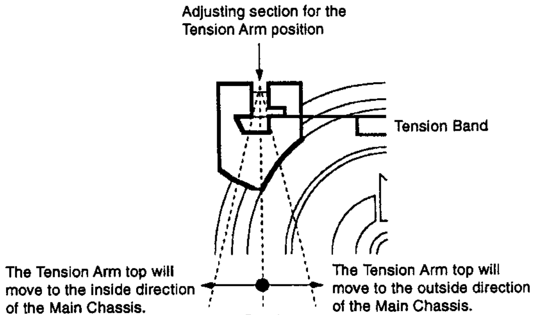

Adjusting section for the Tension Arm position
Tension Band
The Tension Arm top will move to the inside direction of the Main Chassis.
The Tension Arm top will move to the outside direction of the Main Chassis.
Bend

Fig. 1-2-B

1-3: CONFIRMATION OF PLAYBACK TORQUE AND BACK TENSION TORQUE DURING PLAYBACK

1. Load a video tape (E-180) recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in **Fig. 1-3**. Confirm that the meter indicates 20 ± 2gf in the beginning of playback.

- USING A CASSETTE TYPE TORQUE TAPE **(JG100A)**

1. After confirmation and adjustment of Tension Post position **(Refer to item 1-2)**, load the cassette type torque tape **(JG100A)** and set to the PLAY mode.
2. Confirm that the right meter of the torque tape indicates 50~90gf•cm during playback in SP mode.
3. Confirm that the left meter of the torque tape indicates 25~40gf•cm during playback in SP mode.

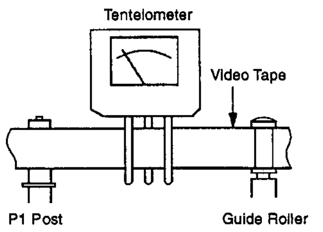

Tentelometer
Video Tape
P1 Post
Guide Roller

Fig. 1-3

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF VSR TORQUE

1. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Set to the Picture Search (Rewind) mode. **(Refer to Fig.1-4-B)**
2. Then, confirm that it indicates 120~180gf•cm.

NOTE

Install the Torque Gauge on the reel disk firmly. Press the REW button to turn the reel disk.

1-5: CONFIRMATION OF REEL BRAKE TORQUE

(S Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Ass'y from the S Reel.
3. Install the Torque Gauge **(JG002F)** and Adapter **(JG002B)** on the S Reel. Turn the Torque Gauge **(JG002F)** clockwise.
4. Then, confirm that it indicates 60~100gf•cm.

(T Reel Brake) **(Refer to Fig. 1-4-B)**

1. Once set to the Fast Forward mode then set to the Stop mode. While, unplug the AC cord when the Pinch Roller Block is on the position of **Fig. 1-4-A**.
2. Move the Idler Ass'y from the T Reel.
3. Install the Torque Gauge **(JG002E)** and Adapter **(JG002B)** on the T reel. Turn the Torque Gauge **(JG002E)** counterclockwise.
4. Then, confirm that it indicates 30~50gf•cm.

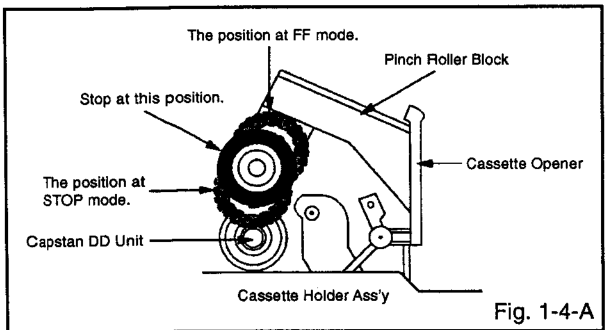

The position at FF mode.
Pinch Roller Block
Stop at this position.
Cassette Opener
The position at STOP mode.
Capstan DD Unit
Cassette Holder Ass'y

Fig. 1-4-A

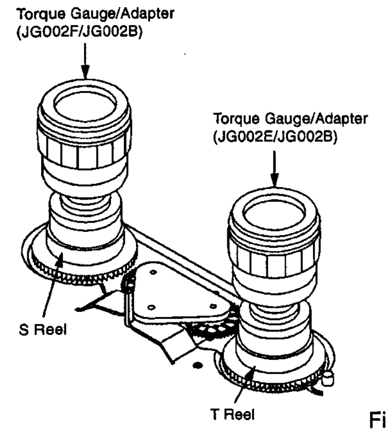

Torque Gauge/Adapter (JG002F/JG002B)
Torque Gauge/Adapter (JG002E/JG002B)
S Reel
T Reel

Fig. 1-4-B

NOTE

If the torque is out of the range, replace the following parts.

Check item	Replacement Part
1-4	Idler Ass'y/Clutch Ass'y
1-5	S Reel side: S Reel/Tension Band/Tension Connect/Tension Arm Ass'y T Reel side: T Reel/T Brake Band//T Brake Spring/T Brake Arm

2. CONFIRMATION AND ADJUSTMENT OF TAPE RUNNING MECHANISM

Tape Running Mechanism is adjusted precisely at the factory. Adjustment is not necessary as usual. When you replace the parts of the tape running mechanism because of long term usage or failure, the confirmation and adjustment are necessary.

2-1: GUIDE ROLLER

1. Playback the VHS Alignment Tape **(JG001C or JG001E)**. **(Refer to SERVICING FIXTURE AND TOOLS)**
2. Connect CH-1 of the oscilloscope to **TP102 (Envelope)** and CH-2 to **TP101 (SW Pulse)**.
3. Press the Tracking button on the remote control to set tracking to center.
4. Trigger with SW Pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. When observing the envelope, adjust the Adjusting Driver **(JG005)** slightly until the envelope will be flat. Even if you press the Tracking Button, adjust so that flatness is not moved so much.
6. Adjust so that the A : B ratio is better than 3 : 2 as shown in **Fig. 2-1-B**, even if you press the Tracking Button to move the envelope (The envelope waveform will begin to decrease when you press the Tracking Button).
7. Adjust the PG shifter during playback.
   (Refer to the ELECTRICAL ADJUSTMENTS)

NOTE

After adjustment, confirm and adjust A/C head.
(Refer to item 2-2)

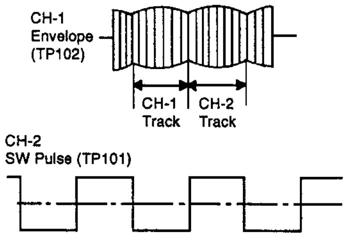

CH-1
Envelope
(TP102)
CH-1 Track
CH-2 Track
CH-2
SW Pulse (TP101)

Fig. 2-1-A

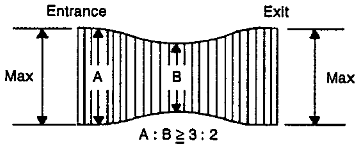

Entrance
Exit
Max
A
B
Max
A : B ≥ 3 : 2

Fig. 2-1-B

MECHANICAL ADJUSTMENTS

2-2: CONFIRMATION AND ADJUSTMENT OF AUDIO/ CONTROL HEAD

When the Tape Running Mechanism does not work well, adjust the following items.

1. Playback the VHS Alignment Tape **(JG001C or JG001E). (Refer to SERVICING FIXTURE AND TOOLS)**
2. Confirm that the reflected picture of stamp mark is appeared on the tape prior to P4 Post as shown in **Fig. 2-2-A.**
   a) When the reflected picture is distorted, turn the screw ① clockwise until the distortion is disappeared.
   b) When the reflected picture is not distorted, turn the screw ① counterclockwise until little distortion is appeared, then adjust the a).
3. Turn the screw ② to set the audio level to maximum.
4. Confirm that the bottom of the Audio/ Control Head and the bottom of the tape is shown in **Fig. 2-2-C.**
   c) When the height is not correct, turn the screw ③ to adjust the height. Then, adjust the 1~3 again.

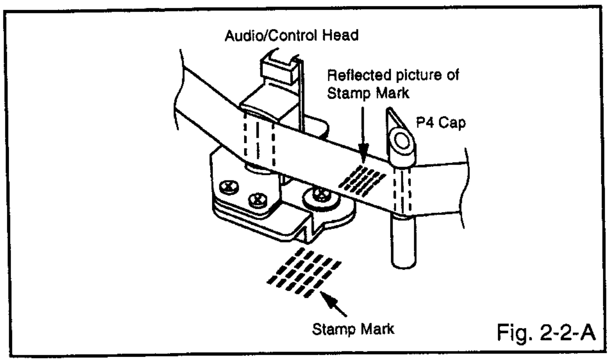


Fig. 2-2-A

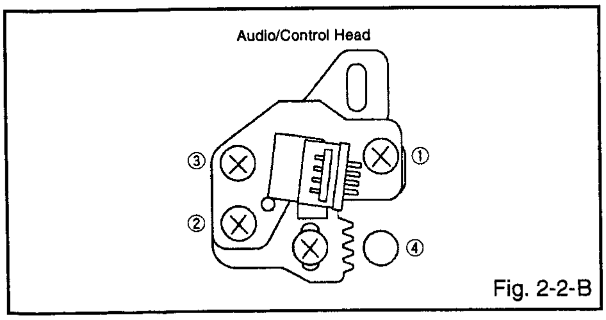


Fig. 2-2-B

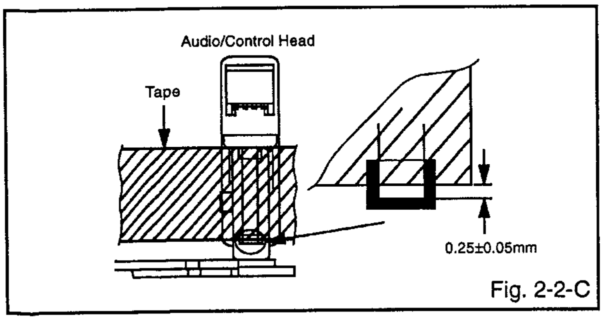


Fig. 2-2-C

2-3: TAPE RUNNING ADJUSTMENT (X VALUE ADJUSTMENT)

1. Confirm and adjust the height of the Reel Disk. **(Refer to item 1-1)**
2. Confirm and adjust the position of the Tension Post. **(Refer to item 1-2)**
3. Adjust the Guide Roller. **(Refer to item 2-1)**
4. Confirm and adjust the Audio/Control Head. **(Refer to item 2-2)**
5. Connect CH-1 of the oscilloscope to **TP101**, CH-2 to **TP102** and CH-3 to **HOT side of Audio Out Jack.**
6. Playback the VHS Alignment Tape **(JG001U or JG001V). (Refer to SERVICING FIXTURE AND TOOLS)**
7. Press the Tracking button on the remote control to set tracking to center.
8. Set the X Value adjustment driver **(JG153)** to the ④ of **Fig. 2-2-B**. Adjust X value so that the envelope waveform output becomes maximum. Check if the relation between Audio and Envelope waveform becomes (1) or (2) of **Fig. 2-3.**

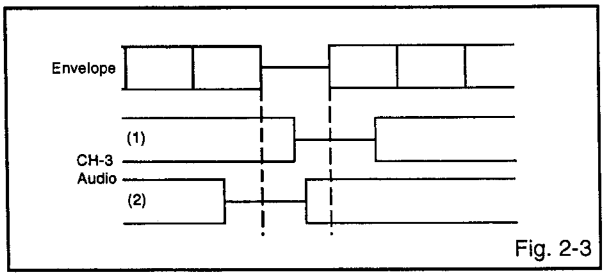


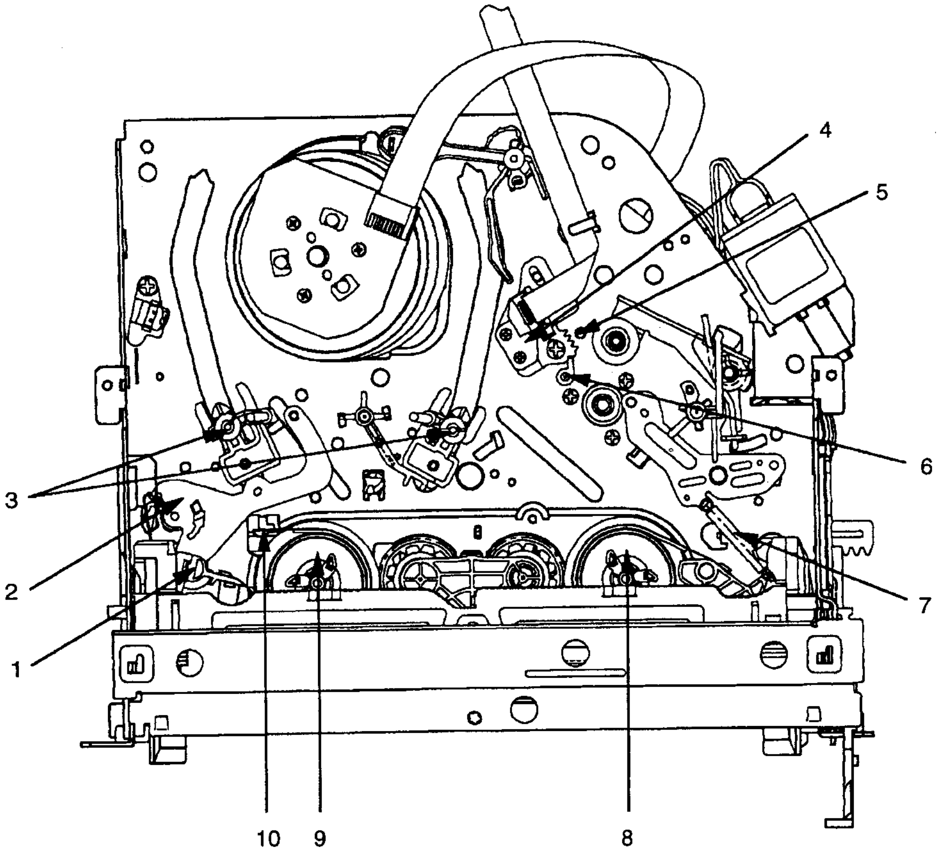
Fig. 2-3

2-4: CONFIRM HI-FI AUDIO (Hi-Fi model only)

1. Connect CH-1 of the oscilloscope to **TP102** and CH-2 to the **Hi-Fi Audio Out Jack.**
2. Playback the VHS Alignment Tape **(JG001R). (Refer to SERVICING FIXTURE AND TOOLS)**
3. Press the Tracking button on the remote control to set tracking to center.
4. Press the Tracking Up button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
5. Press the Tracking button on the remote control to set tracking to center.
6. Press the Tracking Down button and count number of steps which the audio output is changed from Hi-Fi (10KHz) to MONO (6KHz).
7. If the difference are more than 3 steps, set the X Value adjustment driver **(JG153)** to ④ of **Fig. 2-2-B**. Change the X Value and adjust it so that the value becomes within 2 steps.

MECHANICAL ADJUSTMENTS

3. MECHANISM ADJUSTMENT PARTS LOCATION GUIDE



1. Tension Connect	6. P4 Post
2. Tension Arm	7. T Brake Spring
3. Guide Roller	8. T Reel
4. Audio/Control Head	9. S Reel
5. X value adjustment driver hole	10. Adjusting section for the Tension Arm position

ELECTRICAL ADJUSTMENTS

Read and perform this adjustment when repairing the circuits or replacing electrical parts or PCB assemblies.

1. BASIC ADJUSTMENT

CAUTION

When you exchange IC and Transistor for a heat sink, apply the silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor.)

1-1: PG SHIFTER

CONDITIONS

MODE-PLAYBACK
Input Signal-Alignment Tape **(JG001E)**

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP101** and CH-2 to **pin 19 of J8001**.
2. Playback the alignment tape. **(JG001E)**
3. Press both CH UP button on the set and the STOP button on the set for more than 2 seconds.

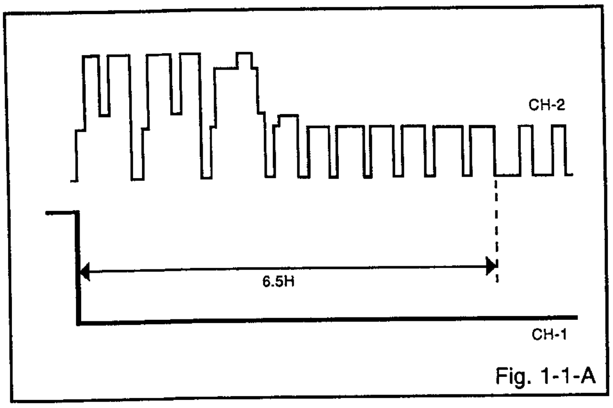


Fig. 1-1-A

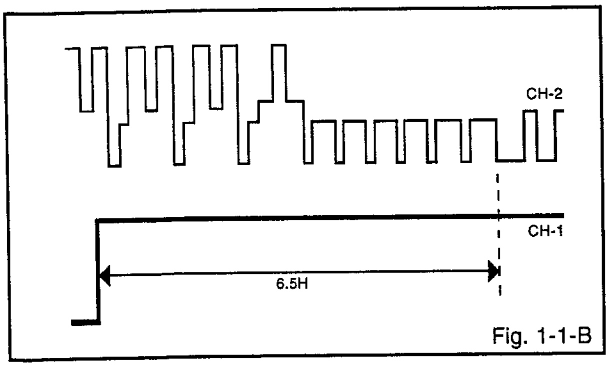


Fig. 1-1-B

1-2: SEPARATION

Please do the method (1) or method (2) adjustment.

Method (1)

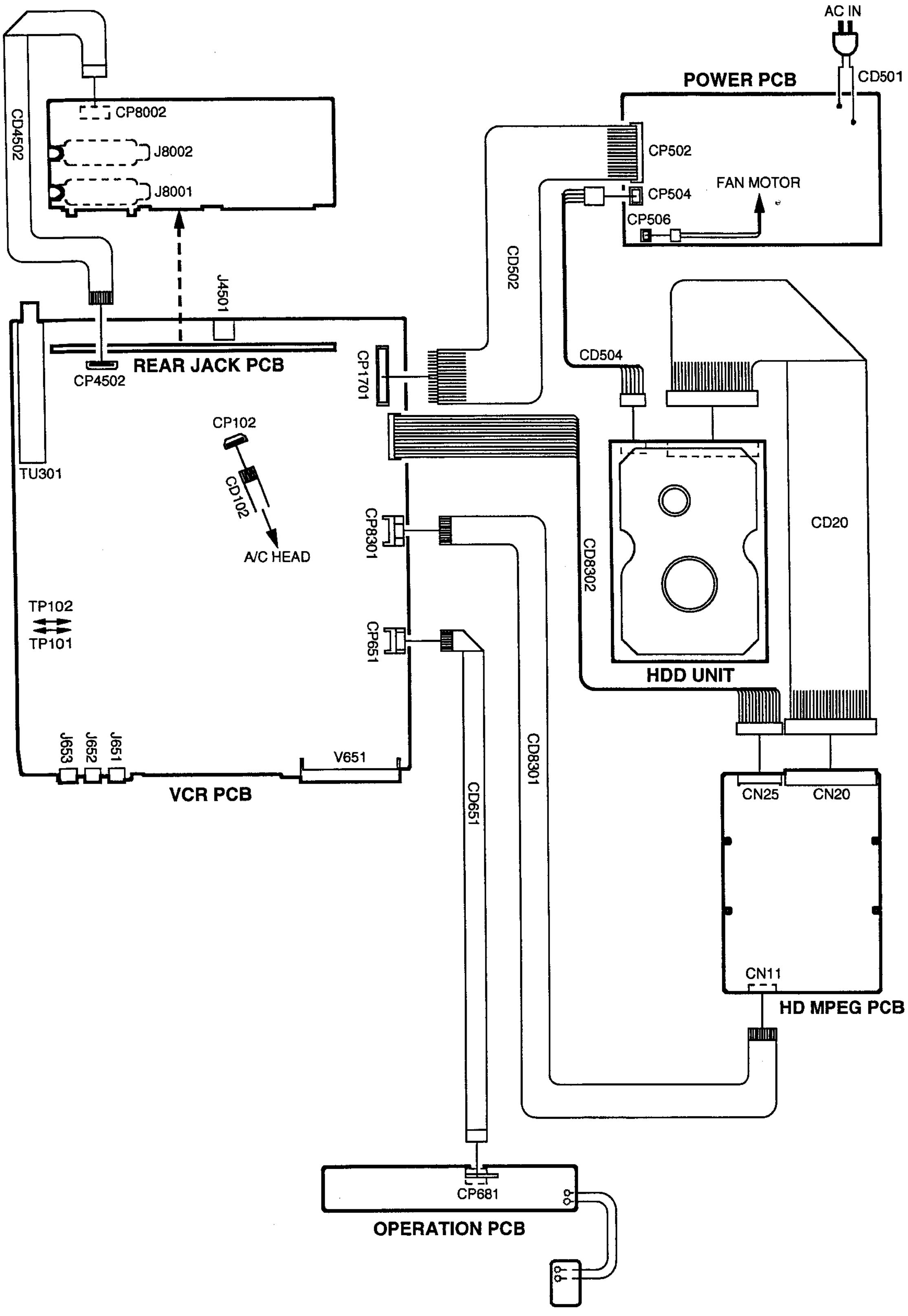
1. Set the Main unit to the stop position of VCR mode.
2. Set the multi-sound signal generator for each different L-ch and R-ch frequency (Ex. L-ch=2KHz, R-ch=400Hz) and receive the RF signal.
3. Connect the oscilloscope to the **Audio Out Jack**.
4. Press the AUDIO button on the remote control to set to the stereo mode.
5. Press both REC STOP button on the set and the FF button on the set for more than 2 seconds.
6. Press the Tracking +/- button on the remote control to adjust it until the audio output wave becomes a fine sine wave.

Method (2)

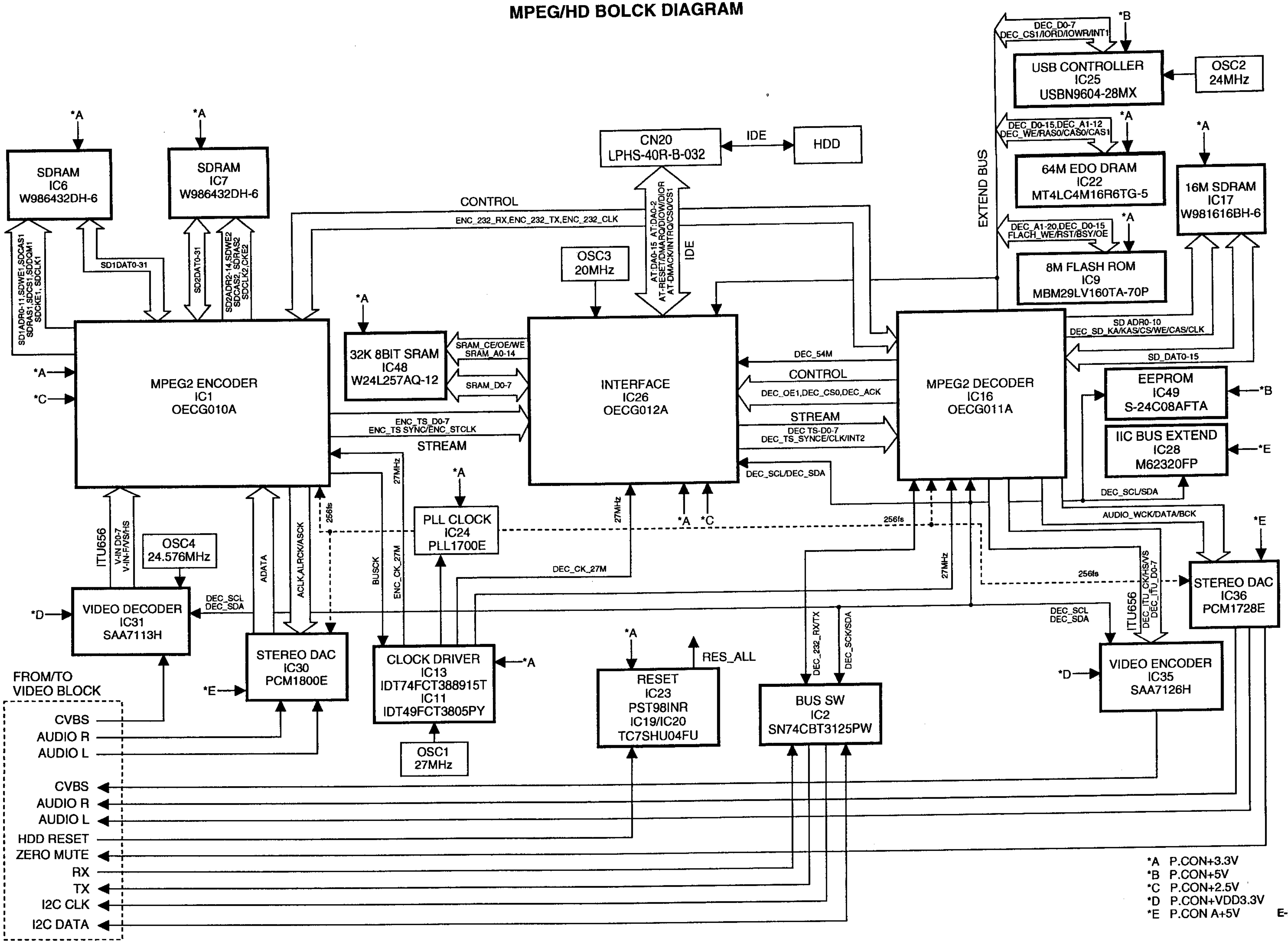
1. Set the Main unit to the stop position of VCR mode.
2. Set the multi-sound signal generator L-ch=1KHz, R-ch =Non input and receive the RF signal.
3. Connect the oscilloscope to the **Audio Out Jack (R-ch)**.
4. Press the AUDIO button on the remote control to set to the stereo mode.
5. Press both REC STOP button on the set and the FF button on the set for more than 2 seconds.
6. Press the Tracking +/- button on the remote control to adjust it until the R-ch output becomes minimum.
7. Set the multi-sound signal generator L-ch=Non input, R-ch=1KHz and receive the RF signal.
8. Connect the oscilloscope to the **Audio Out Jack (L-ch)**.
9. Press the AUDIO button on the remote control to set to the stereo mode.
10. Press both REC STOP button on the set and the FF button on the set for more than 2 seconds.
11. Press the Tracking +/- button on the remote control to adjust it until the L-ch output becomes minimum.

ELECTRICAL ADJUSTMENTS

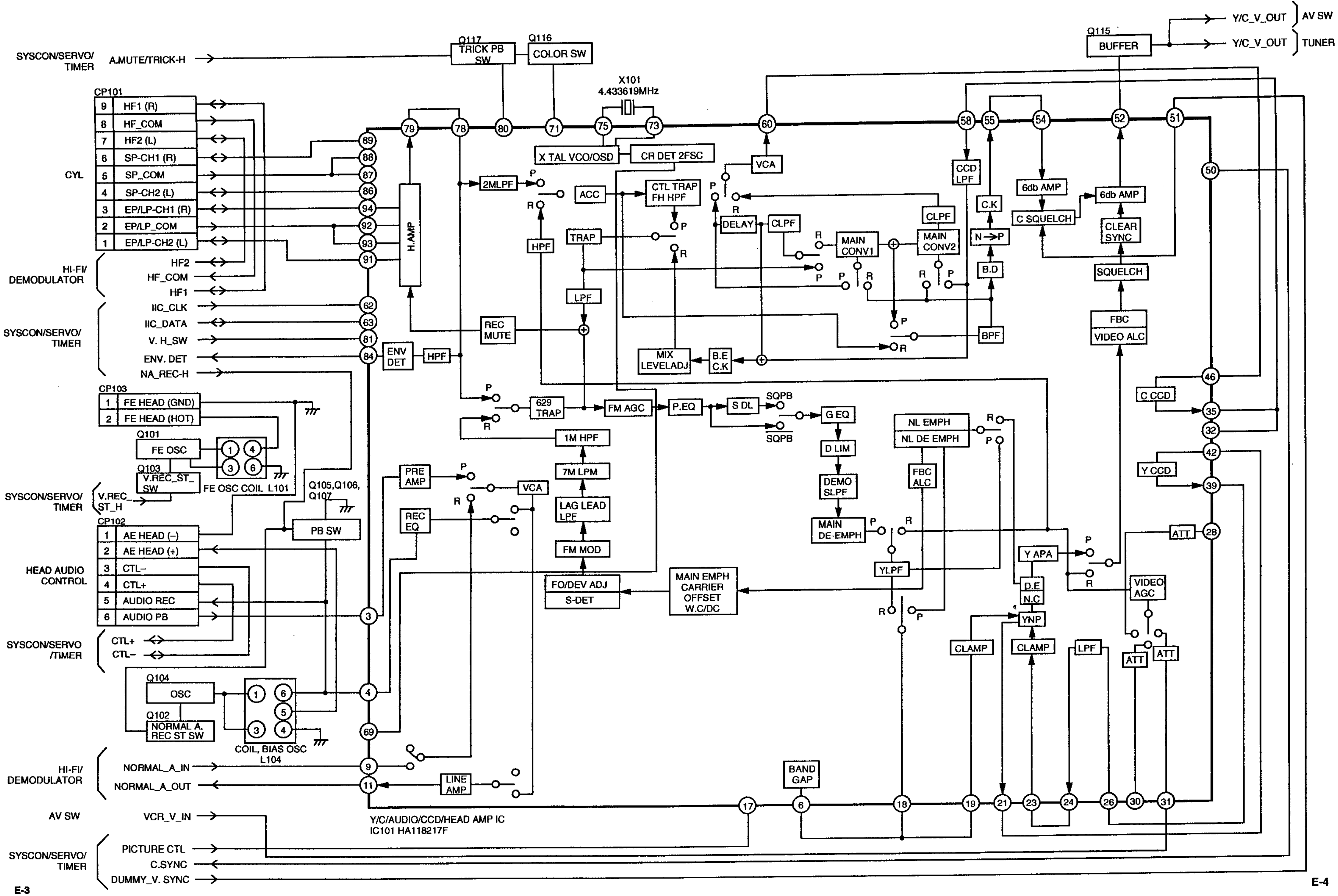
2. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)


AC IN
POWER PCB
CD501
CP502
CP504
FAN MOTOR
CP506
CD502
CD4502
CP8002
J8002
J8001
J4501
REAR JACK PCB
CP4502
CP1701
CD504
TU301
CP102
CD102
A/C HEAD
CP8301
CD8302
CD20
HDD UNIT
TP102
TP101
CP651
J653
J652
J651
V651
VCR PCB
CD8301
CD651
CN25
CN20
CN11
HD MPEG PCB
CP681
OPERATION PCB
LED PCB

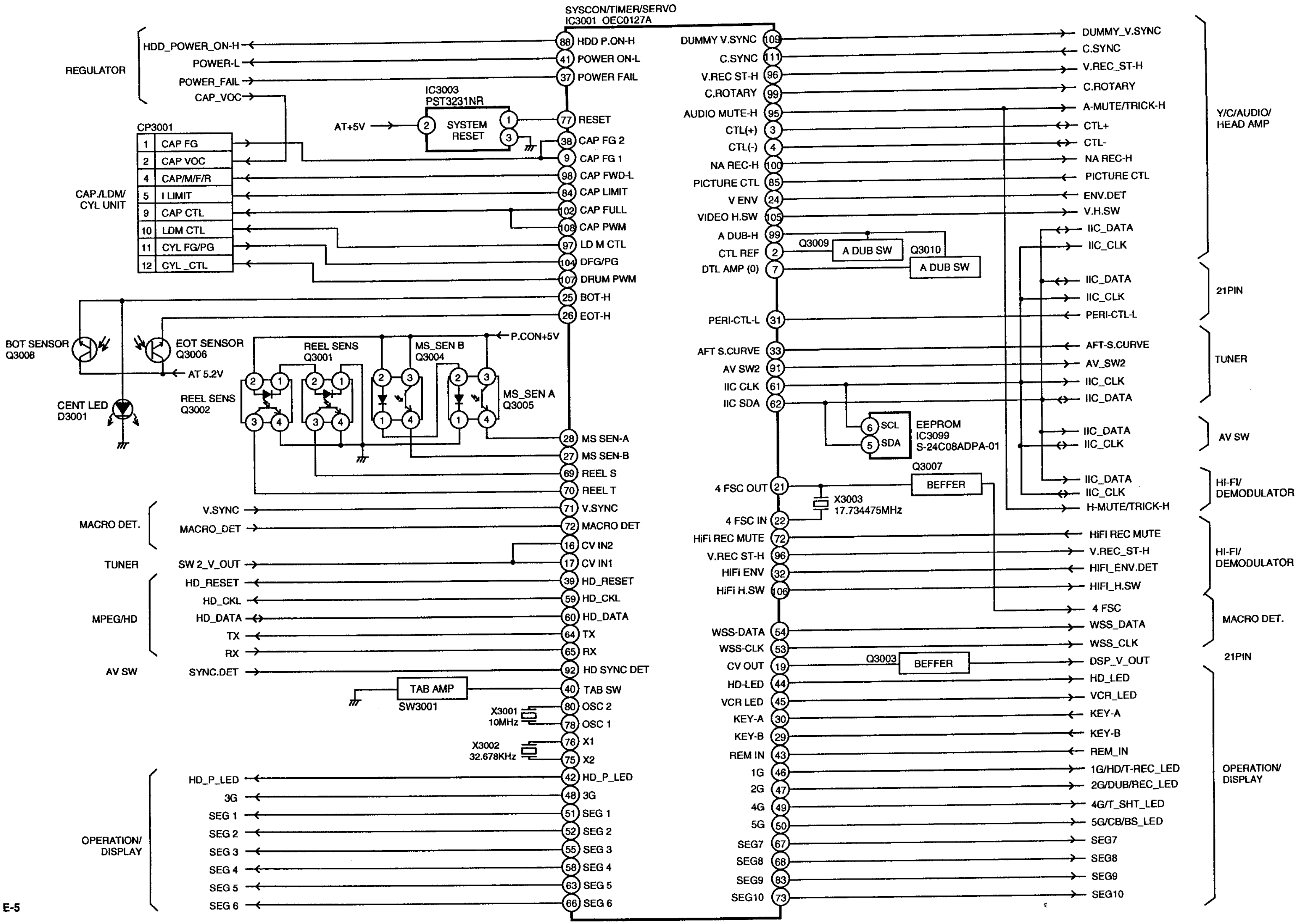
MPEG/HD BOLCK DIAGRAM


SDRAM
IC6
W986432DH-6
SDRAM
IC7
W986432DH-6
*A
SD1ADR0-11,SDWE1,SDCAS1
SDRAS1,SDCS1,SDDQM1
SDCKE1, SDCLK1
SD1DAT0-31
SD2DAT0-31
SD2ADR2-14,SDWE2
SDCAS2, SDRAS2
SDCLK2,CKE2
CONTROL
ENC_232_RX,ENC_232_TX,ENC_232_CLK
CN20
LPHS-40R-B-032
IDE
HDD
AT:DA0-15 AT:DA0-2
AT-RESET/DMARQ/DIOW/DIOR
AT-DMACK/INTRQ/CS0/CS1
IDE
OSC3
20MHz
32K 8BIT SRAM
IC48
W24L257AQ-12
SRAM_CE/OE/WE
SRAM_A0-14
SRAM_D0-7
MPEG2 ENCODER
IC1
OECG010A
*A
*C
ENC_TS_D0-7
ENC_TS SYNC/ENC_STCLK
STREAM
INTERFACE
IC26
OECG012A
DEC_54M
CONTROL
DEC_OE1,DEC_CS0,DEC_ACK
STREAM
DEC TS-D0-7
DEC_TS_SYNCE/CLK/INT2
DEC_SCL/DEC_SDA
MPEG2 DECODER
IC16
OECG011A
DEC_D0-7
DEC_CS1/IORD/IOWR/INT1
*B
USB CONTROLLER
IC25
USBN9604-28MX
OSC2
24MHz
DEC_D0-15,DEC_A1-12
DEC_WE/RAS0/CAS0/CAS1
64M EDO DRAM
IC22
MT4LC4M16R6TG-5
EXTEND BUS
DEC_A1-20,DEC_D0-15
FLACH_WE/RST/BSY/OE
8M FLASH ROM
IC9
MBM29LV160TA-70P
16M SDRAM
IC17
W981616BH-6
SD ADR0-10
DEC_SD_KA/KAS/CS/WE/CAS/CLK
SD_DAT0-15
EEPROM
IC49
S-24C08AFTA
*B
IIC BUS EXTEND
IC28
M62320FP
*E
DEC_SCL/SDA
AUDIO_WCK/DATA/BCK
27MHz
256fs
PLL CLOCK
IC24
PLL1700E
27MHz
*A
*C
256fs
ITU656
V-IN D0-7
V-IN-F/VS/HS
OSC4
24.576MHz
ADATA
ACLK,ALRCK/ASCK
BUSCK
ENC_CK_27M
DEC_CK_27M
27MHz
256fs
DEC_SCL
DEC_SDA
VIDEO DECODER
IC31
SAA7113H
*D
STEREO DAC
IC30
PCM1800E
*E
CLOCK DRIVER
IC13
IDT74FCT388915T
IC11
IDT49FCT3805PY
OSC1
27MHz
RESET
IC23
PST98INR
IC19/IC20
TC7SHU04FU
RES_ALL
DEC_232_RX/TX
DEC_SCK/SDA
BUS SW
IC2
SN74CBT3125PW
DEC_SCL
DEC_SDA
ITU656
DEC_ITU_CK/HS/VS
DEC_ITU_D0-7
VIDEO ENCODER
IC35
SAA7126H
STEREO DAC
IC36
PCM1728E
FROM/TO
VIDEO BLOCK
CVBS
AUDIO R
AUDIO L
CVBS
AUDIO R
AUDIO L
HDD RESET
ZERO MUTE
RX
TX
I2C CLK
I2C DATA
*A P.CON+3.3V
*B P.CON+5V
*C P.CON+2.5V
*D P.CON+VDD3.3V
*E P.CON A+5V

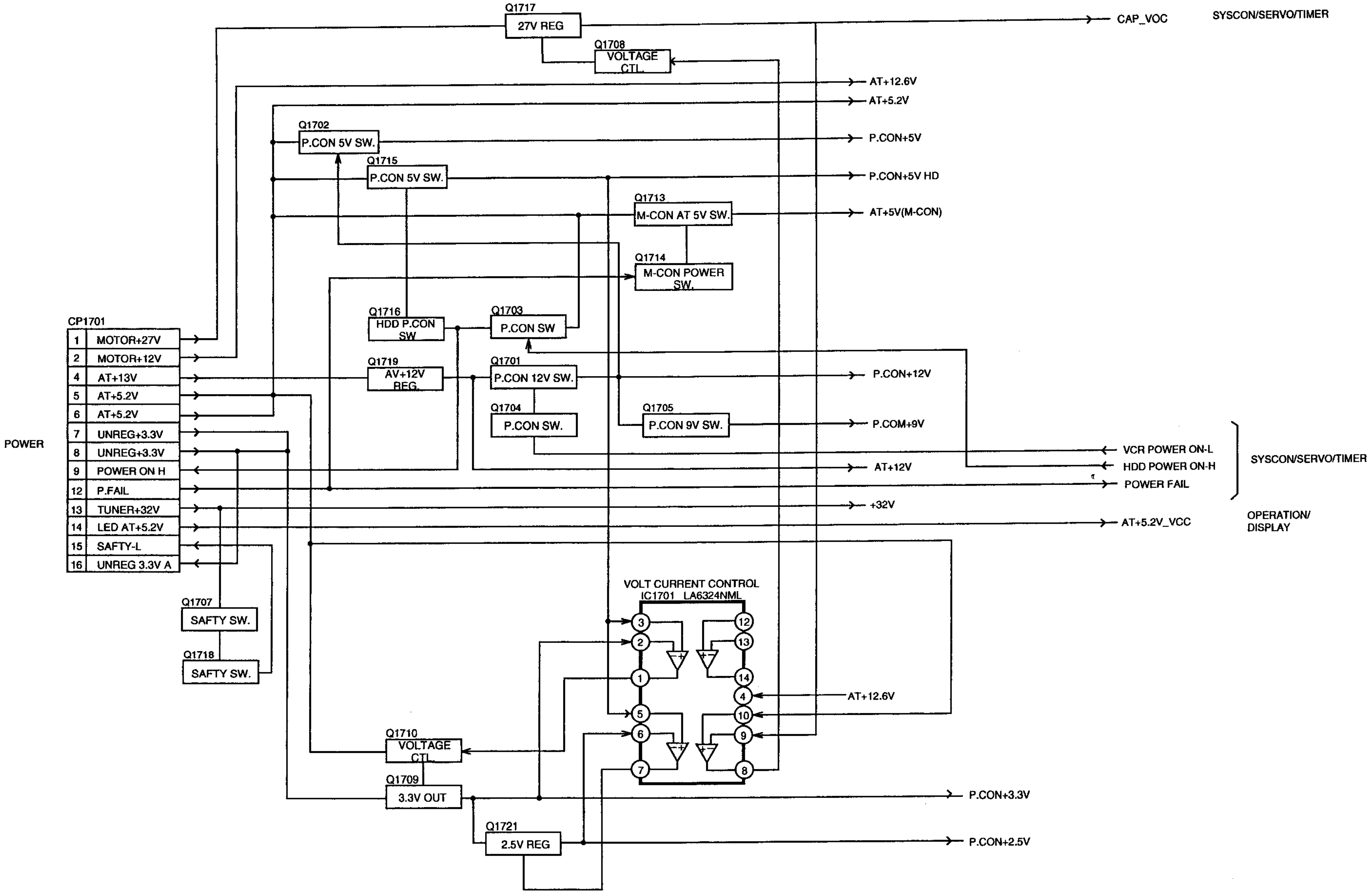
Y/C/AUDIO/HEAD AMP BLOCK DIAGRAM


SYSCON/SERVO/ TIMER
A.MUTE/TRICK-H
Q117
TRICK PB SW
Q116
COLOR SW
X101
4.433619MHz
Q115
BUFFER
Y/C_V_OUT
Y/C_V_OUT
AV SW
TUNER
CP101
9 HF1 (R)
8 HF_COM
7 HF2 (L)
6 SP-CH1 (R)
5 SP_COM
4 SP-CH2 (L)
3 EP/LP-CH1 (R)
2 EP/LP_COM
1 EP/LP-CH2 (L)
CYL
HI-FI/ DEMODULATOR
HF2
HF_COM
HF1
SYSCON/SERVO/ TIMER
IIC_CLK
IIC_DATA
V. H_SW
ENV. DET
NA_REC-H
CP103
1 FE HEAD (GND)
2 FE HEAD (HOT)
Q101
FE OSC
Q103
V.REC_ST_SW
FE OSC COIL L101
SYSCON/SERVO/ TIMER
V.REC_ST_H
Q105,Q106, Q107
PB SW
CP102
1 AE HEAD (-)
2 AE HEAD (+)
3 CTL-
4 CTL+
5 AUDIO REC
6 AUDIO PB
HEAD AUDIO CONTROL
SYSCON/SERVO /TIMER
CTL+
CTL-
Q104
OSC
Q102
NORMAL A. REC ST SW
COIL, BIAS OSC L104
HI-FI/ DEMODULATOR
NORMAL_A_IN
NORMAL_A_OUT
AV SW
VCR_V_IN
SYSCON/SERVO/ TIMER
PICTURE CTL
C.SYNC
DUMMY_V. SYNC
H.AMP
2MLPF
X TAL VCO/OSD
CR DET 2FSC
VCA
ACC
CTL TRAP FH HPF
TRAP
HPF
LPF
REC MUTE
ENV DET
HPF
DELAY
CLPF
MAIN CONV1
CLPF
MAIN CONV2
CCD LPF
C.K
N→P
B.D
BPF
6db AMP
C SQUELCH
6db AMP
CLEAR SYNC
SQUELCH
FBC
VIDEO ALC
MIX LEVELADJ
B.E C.K
629 TRAP
FM AGC
P.EQ
S DL
SQPB
SQPB
G EQ
D LIM
DEMO SLPF
MAIN DE-EMPH
NL EMPH
NL DE EMPH
FBC ALC
1M HPF
7M LPM
LAG LEAD LPF
FM MOD
FO/DEV ADJ
S-DET
MAIN EMPH CARRIER OFFSET W.C/DC
PRE AMP
REC EQ
VCA
LINE AMP
YLPF
Y APA
D.E
N.C
YNP
CLAMP
CLAMP
LPF
VIDEO AGC
ATT
ATT
ATT
C CCD
Y CCD
BAND GAP
P
R
79
78
80
71
75
73
60
58
55
54
52
51
50
89
88
87
86
94
92
93
91
62
63
81
84
46
35
32
42
39
28
3
4
69
9
11
17
6
18
19
21
23
24
26
30
31
Y/C/AUDIO/CCD/HEAD AMP IC
IC101 HA118217F

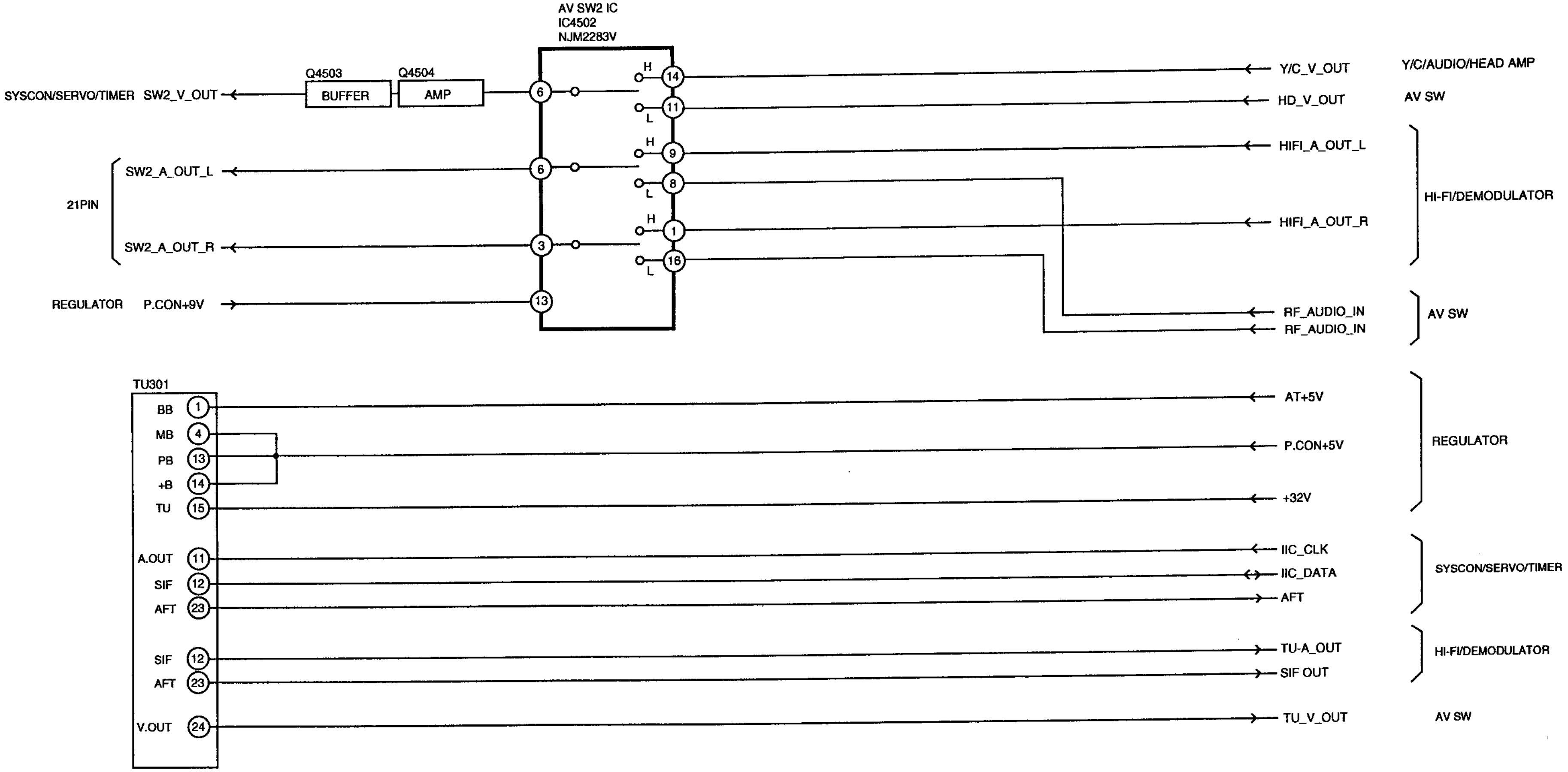
SYSCON/SERVO/TIME BLOCK DIAGRAM


SYSCON/TIMER/SERVO
IC3001 OEC0127A
REGULATOR
HDD_POWER_ON-H
POWER-L
POWER_FAIL
CAP_VOC
IC3003
PST3231NR
AT+5V
SYSTEM RESET
CP3001
1 CAP FG
2 CAP VOC
4 CAP/M/F/R
5 I LIMIT
9 CAP CTL
10 LDM CTL
11 CYL FG/PG
12 CYL _CTL
CAP./LDM/ CYL UNIT
BOT SENSOR Q3008
EOT SENSOR Q3006
AT 5.2V
CENT LED D3001
REEL SENS Q3001
REEL SENS Q3002
MS_SEN B Q3004
MS_SEN A Q3005
P.CON+5V
MACRO DET.
V.SYNC
MACRO_DET
TUNER
SW 2_V_OUT
MPEG/HD
HD_RESET
HD_CKL
HD_DATA
TX
RX
AV SW
SYNC.DET
TAB AMP
SW3001
X3001 10MHz
X3002 32.678KHz
OPERATION/ DISPLAY
HD_P_LED
3G
SEG 1
SEG 2
SEG 3
SEG 4
SEG 5
SEG 6
88 HDD P.ON-H
41 POWER ON-L
37 POWER FAIL
77 RESET
38 CAP FG 2
9 CAP FG 1
98 CAP FWD-L
84 CAP LIMIT
102 CAP FULL
108 CAP PWM
97 LD M CTL
104 DFG/PG
107 DRUM PWM
25 BOT-H
26 EOT-H
28 MS SEN-A
27 MS SEN-B
69 REEL S
70 REEL T
71 V.SYNC
72 MACRO DET
16 CV IN2
17 CV IN1
39 HD_RESET
59 HD_CKL
60 HD_DATA
64 TX
65 RX
92 HD SYNC DET
40 TAB SW
80 OSC 2
78 OSC 1
76 X1
75 X2
42 HD_P_LED
48 3G
51 SEG 1
52 SEG 2
55 SEG 3
58 SEG 4
63 SEG 5
66 SEG 6
DUMMY V.SYNC 109
C.SYNC 111
V.REC ST-H 96
C.ROTARY 99
AUDIO MUTE-H 95
CTL(+) 3
CTL(-) 4
NA REC-H 100
PICTURE CTL 85
V ENV 24
VIDEO H.SW 105
A DUB-H 99
CTL REF 2
DTL AMP (0) 7
Q3009
A DUB SW
Q3010
A DUB SW
PERI-CTL-L 31
AFT S.CURVE 33
AV SW2 91
IIC CLK 61
IIC SDA 62
6 SCL
5 SDA
EEPROM
IC3099
S-24C08ADPA-01
Q3007
BEFFER
4 FSC OUT 21
X3003
17.734475MHz
4 FSC IN 22
HiFi REC MUTE 72
V.REC ST-H 96
HiFi ENV 32
HiFi H.SW 106
WSS-DATA 54
WSS-CLK 53
CV OUT 19
Q3003
BEFFER
HD-LED 44
VCR LED 45
KEY-A 30
KEY-B 29
REM IN 43
1G 46
2G 47
4G 49
5G 50
SEG7 67
SEG8 68
SEG9 83
SEG10 73
DUMMY_V.SYNC
C.SYNC
V.REC_ST-H
C.ROTARY
A-MUTE/TRICK-H
CTL+
CTL-
NA REC-H
PICTURE CTL
ENV.DET
V.H.SW
IIC_DATA
IIC_CLK
Y/C/AUDIO/ HEAD AMP
IIC_DATA
IIC_CLK
PERI-CTL-L
21PIN
AFT-S.CURVE
AV_SW2
IIC_CLK
IIC_DATA
TUNER
IIC_DATA
IIC_CLK
AV SW
IIC_DATA
IIC_CLK
H-MUTE/TRICK-H
HI-FI/ DEMODULATOR
HiFi REC MUTE
V.REC_ST-H
HIFI_ENV.DET
HIFI_H.SW
HI-FI/ DEMODULATOR
4 FSC
WSS_DATA
WSS_CLK
MACRO DET.
DSP_V_OUT
21PIN
HD_LED
VCR_LED
KEY-A
KEY-B
REM_IN
1G/HD/T-REC_LED
2G/DUB/REC_LED
4G/T_SHT_LED
5G/CB/BS_LED
SEG7
SEG8
SEG9
SEG10
OPERATION/ DISPLAY

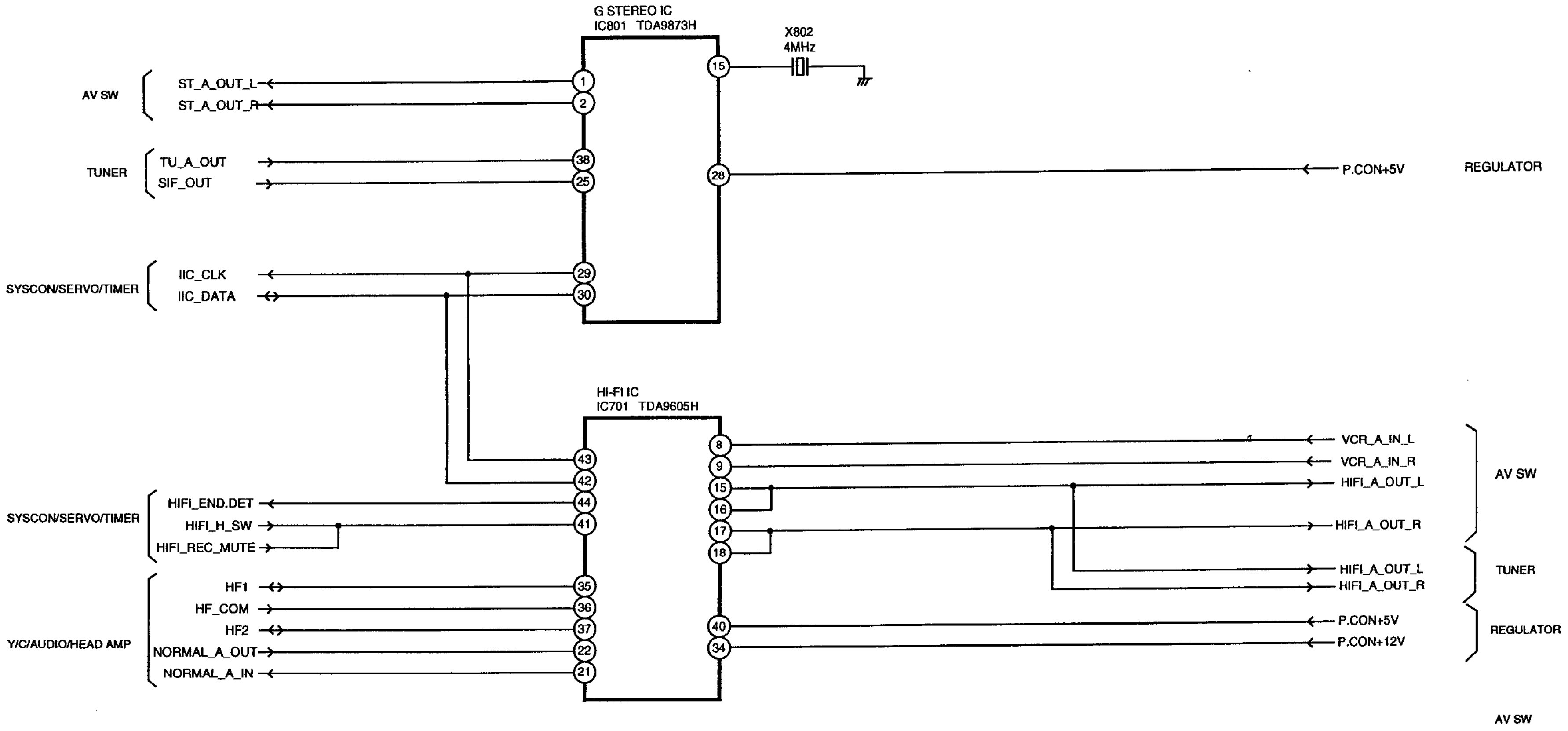
REGULATOR BOLCK DIAGRAM


Q1717
27V REG
CAP_VOC
SYSCON/SERVO/TIMER
Q1708
VOLTAGE CTL.
AT+12.6V
AT+5.2V
Q1702
P.CON 5V SW.
P.CON+5V
Q1715
P.CON 5V SW.
P.CON+5V HD
Q1713
M-CON AT 5V SW.
AT+5V(M-CON)
Q1714
M-CON POWER SW.
Q1716
HDD P.CON SW
Q1703
P.CON SW
CP1701
1 MOTOR+27V
2 MOTOR+12V
4 AT+13V
5 AT+5.2V
6 AT+5.2V
7 UNREG+3.3V
8 UNREG+3.3V
9 POWER ON H
12 P.FAIL
13 TUNER+32V
14 LED AT+5.2V
15 SAFTY-L
16 UNREG 3.3V A
POWER
Q1719
AV+12V REG.
Q1701
P.CON 12V SW.
P.CON+12V
Q1704
P.CON SW.
Q1705
P.CON 9V SW.
P.COM+9V
VCR POWER ON-L
HDD POWER ON-H
POWER FAIL
SYSCON/SERVO/TIMER
AT+12V
+32V
AT+5.2V_VCC
OPERATION/ DISPLAY
VOLT CURRENT CONTROL
IC1701 LA6324NML
3
2
1
5
6
7
12
13
14
4
10
9
8
AT+12.6V
Q1707
SAFTY SW.
Q1718
SAFTY SW.
Q1710
VOLTAGE CTL.
Q1709
3.3V OUT
P.CON+3.3V
Q1721
2.5V REG
P.CON+2.5V

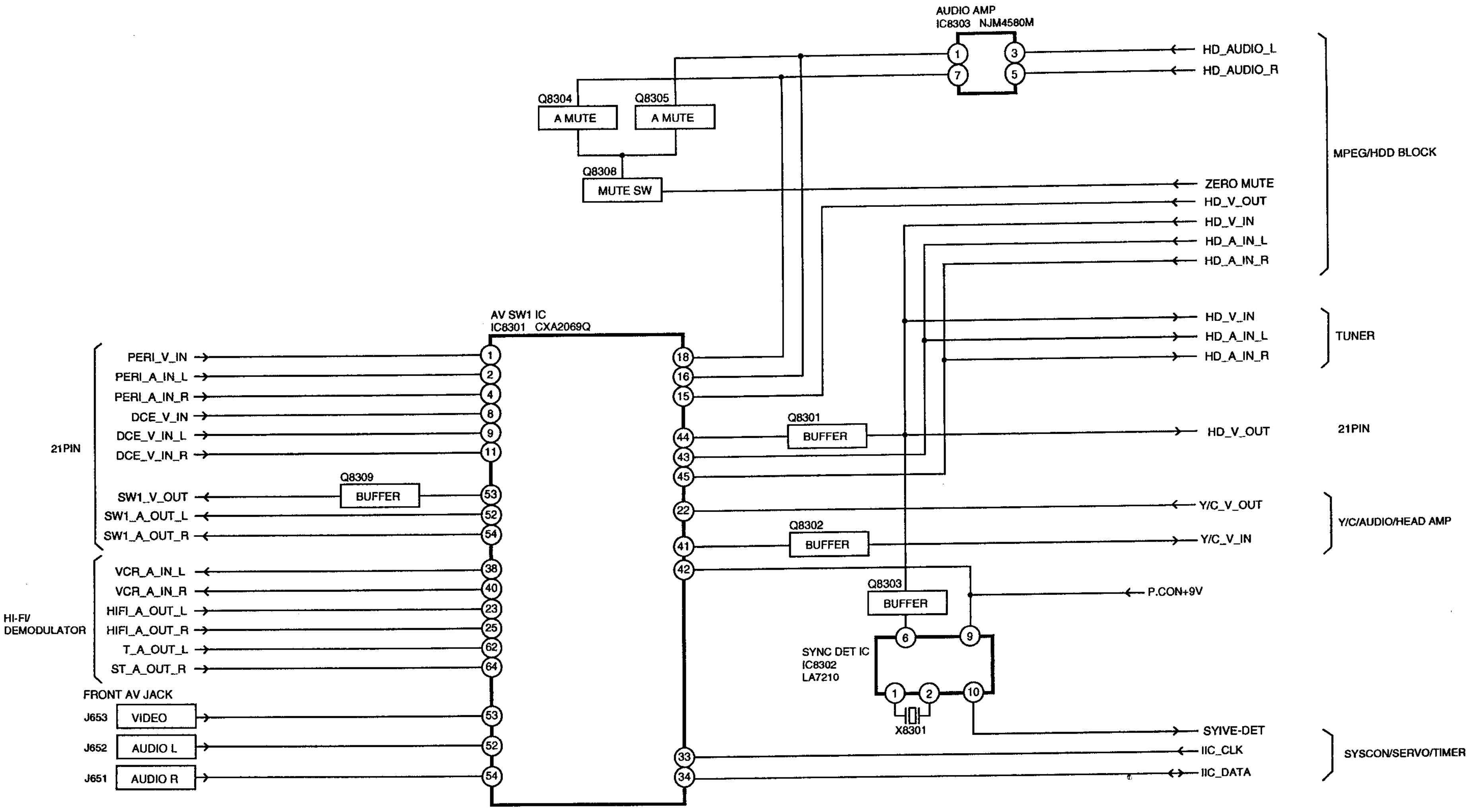
TUNER BLOCK DIAGRAM


AV SW2 IC
IC4502
NJM2283V
Q4503
BUFFER
Q4504
AMP
SYSCON/SERVO/TIMER SW2_V_OUT
21PIN
SW2_A_OUT_L
SW2_A_OUT_R
REGULATOR P.CON+9V
6
6
3
13
H
L
H
L
H
L
14
11
9
8
1
16
Y/C_V_OUT
HD_V_OUT
HIFI_A_OUT_L
HIFI_A_OUT_R
RF_AUDIO_IN
RF_AUDIO_IN
Y/C/AUDIO/HEAD AMP
AV SW
HI-FI/DEMODULATOR
AV SW
TU301
BB 1
MB 4
PB 13
+B 14
TU 15
A.OUT 11
SIF 12
AFT 23
SIF 12
AFT 23
V.OUT 24
AT+5V
P.CON+5V
+32V
REGULATOR
IIC_CLK
IIC_DATA
AFT
SYSCON/SERVO/TIMER
TU-A_OUT
SIF OUT
HI-FI/DEMODULATOR
TU_V_OUT
AV SW

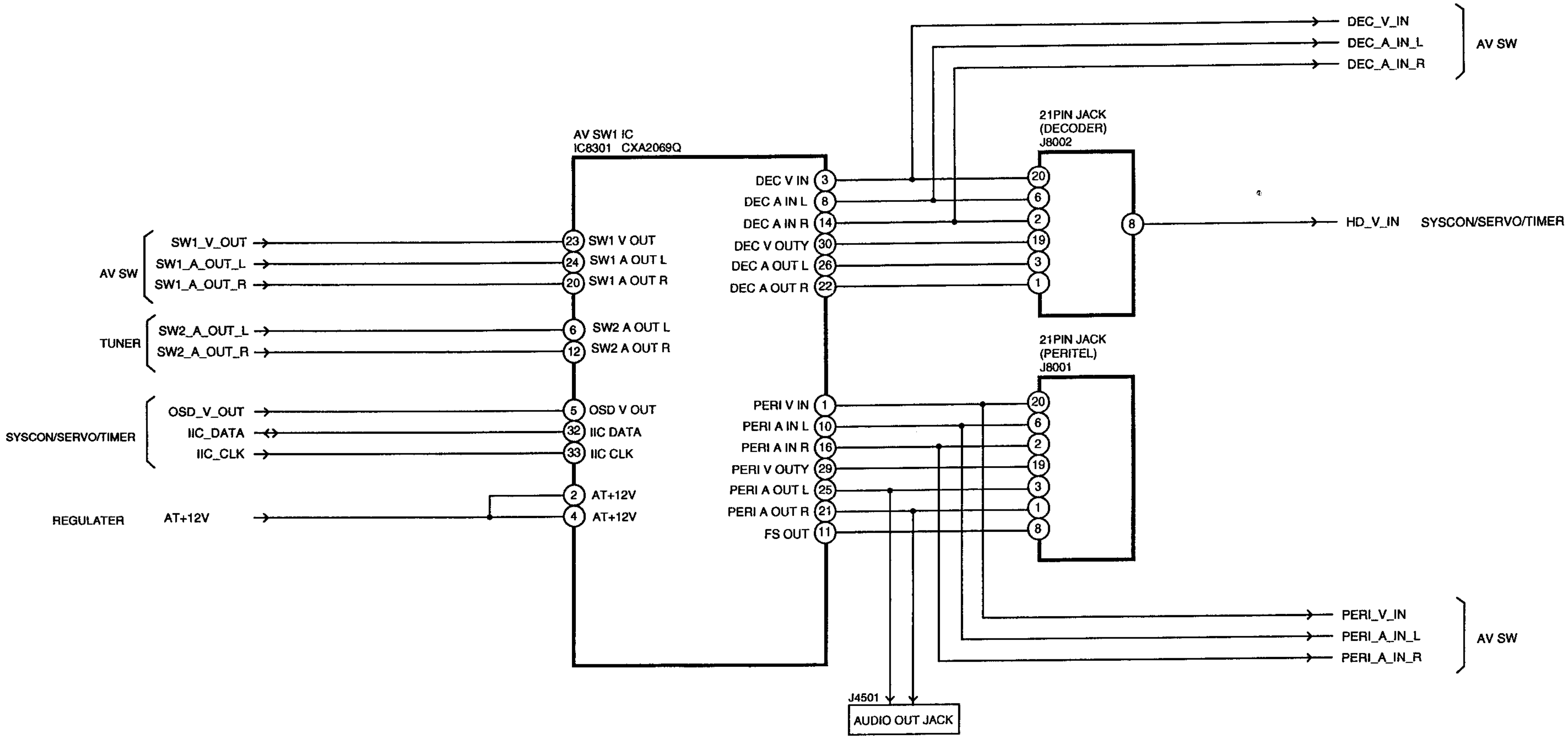
Hi-Fi/DEMODULATOR BLOCK DIAGRAM


G STEREO IC
IC801 TDA9873H
X802
4MHz
AV SW
ST_A_OUT_L
ST_A_OUT_R
TUNER
TU_A_OUT
SIF_OUT
SYSCON/SERVO/TIMER
IIC_CLK
IIC_DATA
1
2
38
25
29
30
15
28
P.CON+5V
REGULATOR
HI-FI IC
IC701 TDA9605H
43
42
44
41
35
36
37
22
21
8
9
15
16
17
18
40
34
SYSCON/SERVO/TIMER
HIFI_END.DET
HIFI_H_SW
HIFI_REC_MUTE
Y/C/AUDIO/HEAD AMP
HF1
HF_COM
HF2
NORMAL_A_OUT
NORMAL_A_IN
VCR_A_IN_L
VCR_A_IN_R
HIFI_A_OUT_L
HIFI_A_OUT_R
AV SW
HIFI_A_OUT_L
HIFI_A_OUT_R
TUNER
P.CON+5V
P.CON+12V
REGULATOR
AV SW

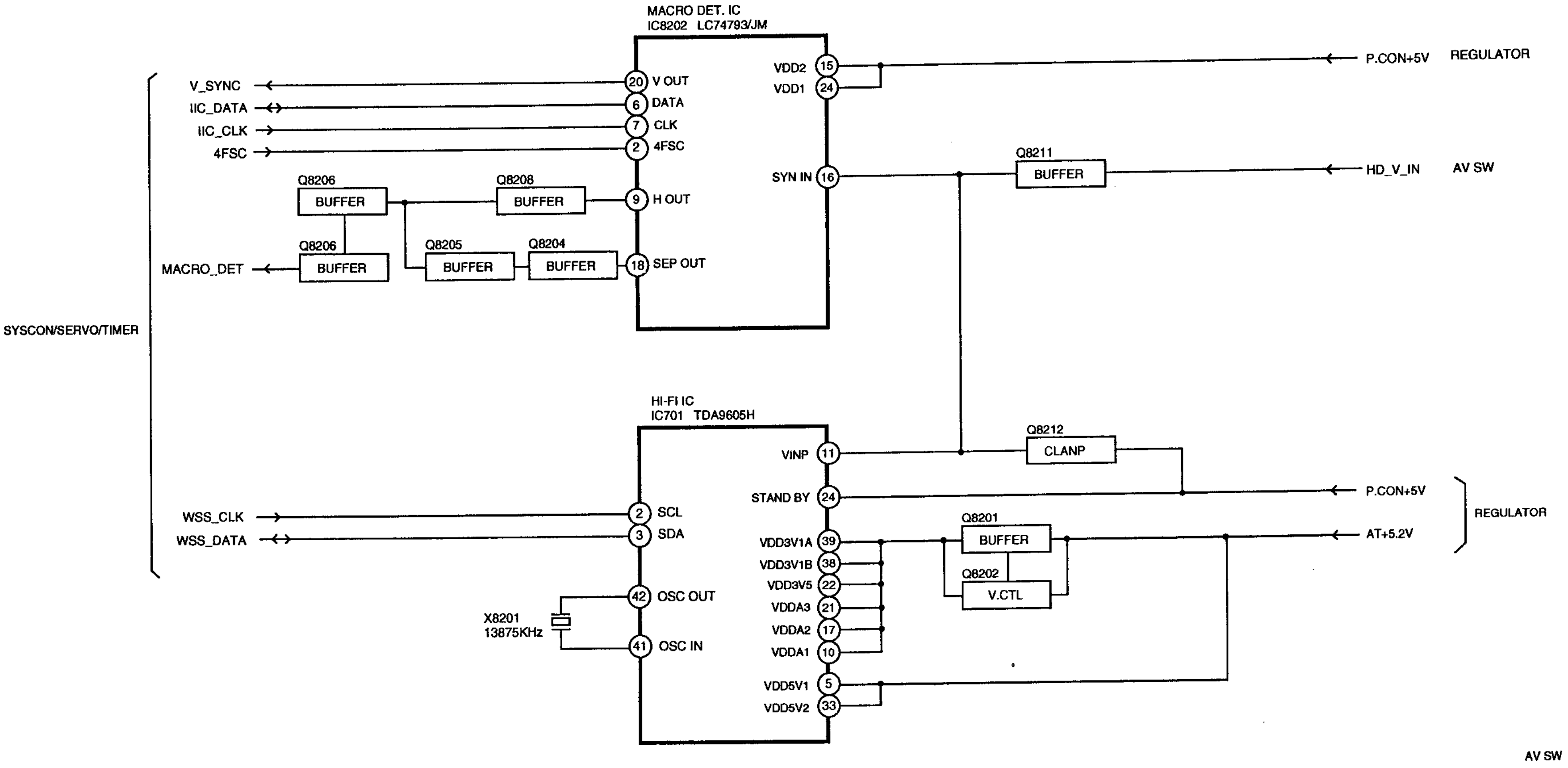
AV SW BLOCK DIAGRAM


AUDIO AMP
IC8303 NJM4580M
1
7
3
5
HD_AUDIO_L
HD_AUDIO_R
Q8304
A MUTE
Q8305
A MUTE
Q8308
MUTE SW
MPEG/HDD BLOCK
ZERO MUTE
HD_V_OUT
HD_V_IN
HD_A_IN_L
HD_A_IN_R
AV SW1 IC
IC8301 CXA2069Q
HD_V_IN
HD_A_IN_L
HD_A_IN_R
TUNER
PERI_V_IN
PERI_A_IN_L
PERI_A_IN_R
DCE_V_IN
DCE_V_IN_L
DCE_V_IN_R
21PIN
1
2
4
8
9
11
18
16
15
Q8301
BUFFER
44
43
45
HD_V_OUT
21PIN
Q8309
BUFFER
SW1_V_OUT
SW1_A_OUT_L
SW1_A_OUT_R
53
52
54
22
Y/C_V_OUT
Q8302
BUFFER
41
Y/C_V_IN
Y/C/AUDIO/HEAD AMP
42
VCR_A_IN_L
VCR_A_IN_R
HIFI_A_OUT_L
HIFI_A_OUT_R
T_A_OUT_L
ST_A_OUT_R
38
40
23
25
62
64
HI-FI/
DEMODULATOR
Q8303
BUFFER
P.CON+9V
SYNC DET IC
IC8302
LA7210
6
9
1
2
10
X8301
FRONT AV JACK
J653
VIDEO
J652
AUDIO L
J651
AUDIO R
53
52
54
33
34
SYIVE-DET
IIC_CLK
IIC_DATA
SYSCON/SERVO/TIMER

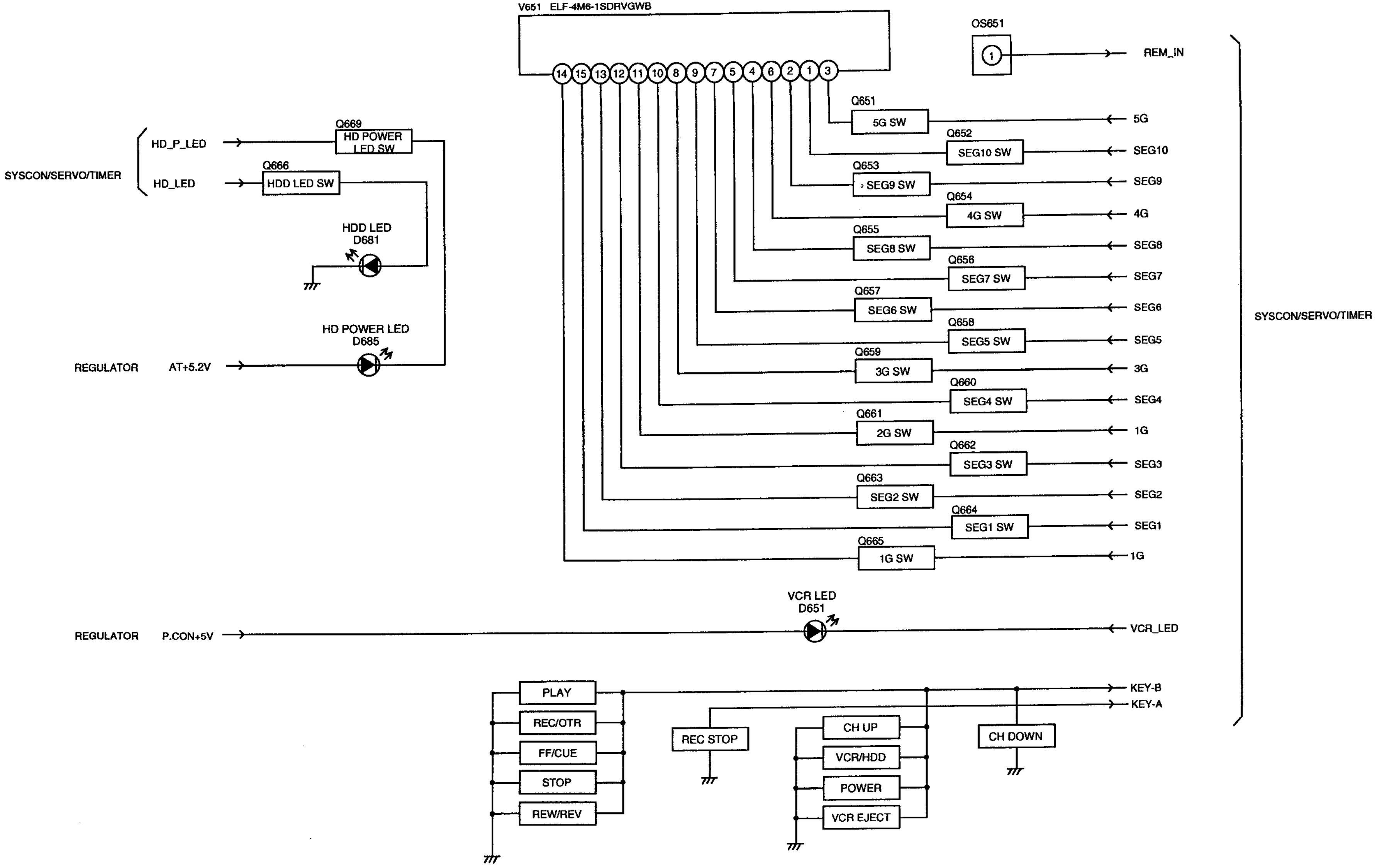
21PIN BLOCK DIAGRAM


DEC_V_IN
DEC_A_IN_L
DEC_A_IN_R
AV SW
21PIN JACK
(DECODER)
J8002
AV SW1 IC
IC8301 CXA2069Q
DEC V IN 3
DEC A IN L 8
DEC A IN R 14
DEC V OUTY 30
DEC A OUT L 26
DEC A OUT R 22
20
6
2
19
3
1
8
HD_V_IN
SYSCON/SERVO/TIMER
AV SW
SW1_V_OUT
SW1_A_OUT_L
SW1_A_OUT_R
23 SW1 V OUT
24 SW1 A OUT L
20 SW1 A OUT R
TUNER
SW2_A_OUT_L
SW2_A_OUT_R
6 SW2 A OUT L
12 SW2 A OUT R
21PIN JACK
(PERITEL)
J8001
SYSCON/SERVO/TIMER
OSD_V_OUT
IIC_DATA
IIC_CLK
5 OSD V OUT
32 IIC DATA
33 IIC CLK
REGULATER
AT+12V
2 AT+12V
4 AT+12V
PERI V IN 1
PERI A IN L 10
PERI A IN R 16
PERI V OUTY 29
PERI A OUT L 25
PERI A OUT R 21
FS OUT 11
20
6
2
19
3
1
8
PERI_V_IN
PERI_A_IN_L
PERI_A_IN_R
AV SW
J4501
AUDIO OUT JACK

MACRO DET. BLOCK DIAGRAM

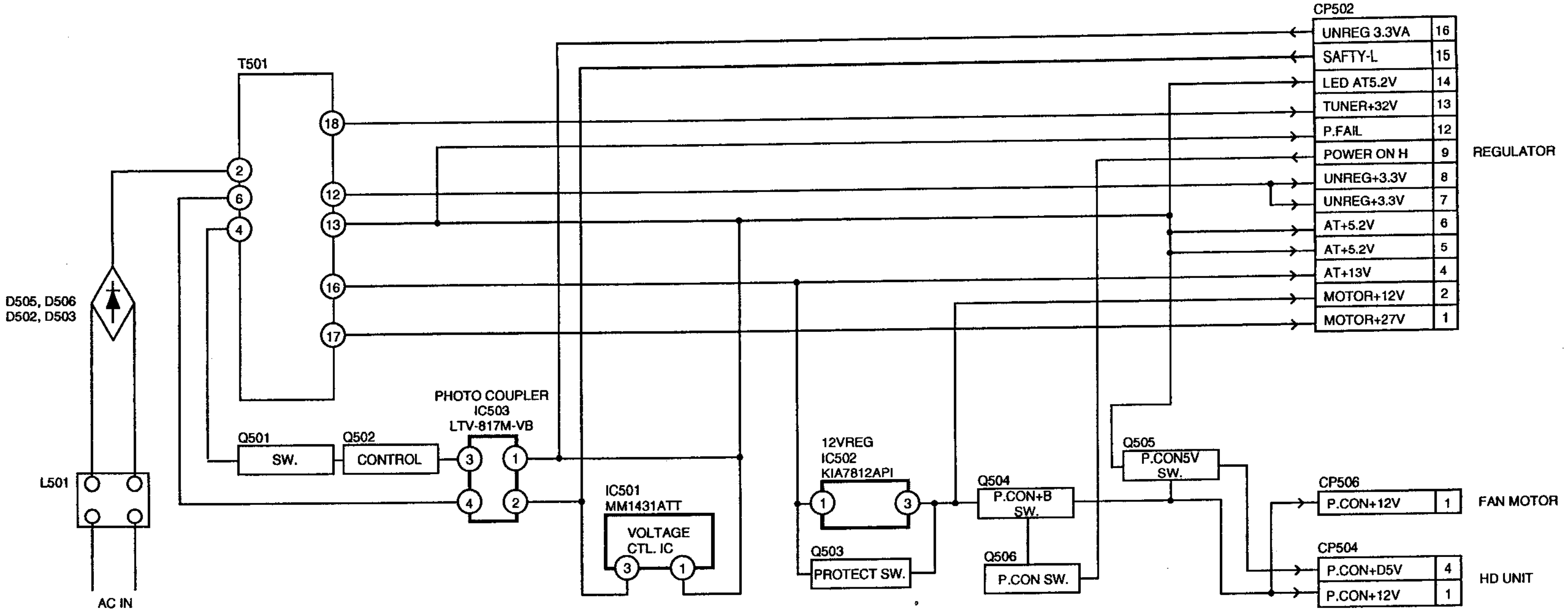

MACRO DET. IC
IC8202 LC74793/JM
V_SYNC
IIC_DATA
IIC_CLK
4FSC
20 V OUT
6 DATA
7 CLK
2 4FSC
VDD2 15
VDD1 24
P.CON+5V
REGULATOR
Q8211
BUFFER
SYN IN 16
HD_V_IN
AV SW
Q8206
BUFFER
Q8208
BUFFER
9 H OUT
Q8206
BUFFER
MACRO_DET
Q8205
BUFFER
Q8204
BUFFER
18 SEP OUT
SYSCON/SERVO/TIMER
HI-FI IC
IC701 TDA9605H
Q8212
CLANP
VINP 11
STAND BY 24
P.CON+5V
REGULATOR
WSS_CLK
WSS_DATA
2 SCL
3 SDA
Q8201
BUFFER
AT+5.2V
VDD3V1A 39
VDD3V1B 38
Q8202
V.CTL
VDD3V5 22
42 OSC OUT
VDDA3 21
X8201
13875KHz
VDDA2 17
41 OSC IN
VDDA1 10
VDD5V1 5
VDD5V2 33
AV SW

OPERATION/DISPLAY BLOCK DIAGRAM



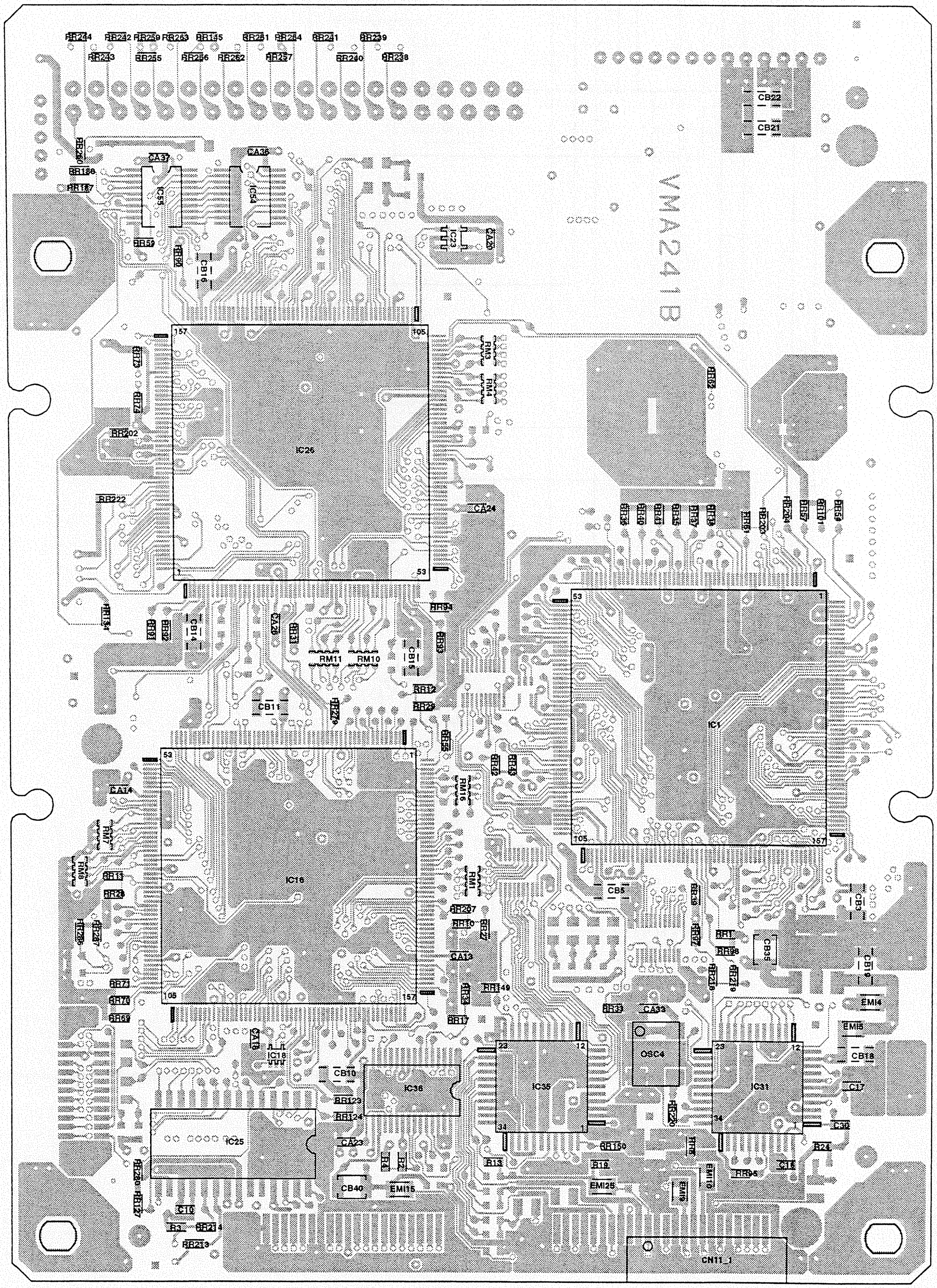
V651 ELF-4M6-1SDRVGWB
14
15
13
12
11
10
8
9
7
5
4
6
2
1
3
OS651
1
REM_IN
SYSCON/SERVO/TIMER
HD_P_LED
HD_LED
Q669
HD POWER LED SW
Q666
HDD LED SW
HDD LED
D681
HD POWER LED
D685
REGULATOR
AT+5.2V
Q651
5G SW
5G
Q652
SEG10 SW
SEG10
Q653
SEG9 SW
SEG9
Q654
4G SW
4G
Q655
SEG8 SW
SEG8
Q656
SEG7 SW
SEG7
Q657
SEG6 SW
SEG6
Q658
SEG5 SW
SEG5
Q659
3G SW
3G
Q660
SEG4 SW
SEG4
Q661
2G SW
1G
Q662
SEG3 SW
SEG3
Q663
SEG2 SW
SEG2
Q664
SEG1 SW
SEG1
Q665
1G SW
1G
SYSCON/SERVO/TIMER
VCR LED
D651
REGULATOR
P.CON+5V
VCR_LED
PLAY
REC/OTR
FF/CUE
STOP
REW/REV
REC STOP
CH UP
VCR/HDD
POWER
VCR EJECT
CH DOWN
KEY-B
KEY-A

POWER BLOCK DIAGRAM


CP502
UNREG 3.3VA 16
SAFTY-L 15
LED AT5.2V 14
TUNER+32V 13
P.FAIL 12
POWER ON H 9
UNREG+3.3V 8
UNREG+3.3V 7
AT+5.2V 6
AT+5.2V 5
AT+13V 4
MOTOR+12V 2
MOTOR+27V 1
REGULATOR
T501
2
6
4
18
12
13
16
17
D505, D506
D502, D503
L501
AC IN
Q501
SW.
Q502
CONTROL
PHOTO COUPLER
IC503
LTV-817M-VB
3
1
4
2
IC501
MM1431ATT
VOLTAGE
CTL. IC
3
1
12VREG
IC502
KIA7812API
1
3
Q503
PROTECT SW.
Q504
P.CON+B
SW.
Q506
P.CON SW.
Q505
P.CON5V
SW.
CP506
P.CON+12V 1
FAN MOTOR
CP504
P.CON+D5V 4
P.CON+12V 1
HD UNIT

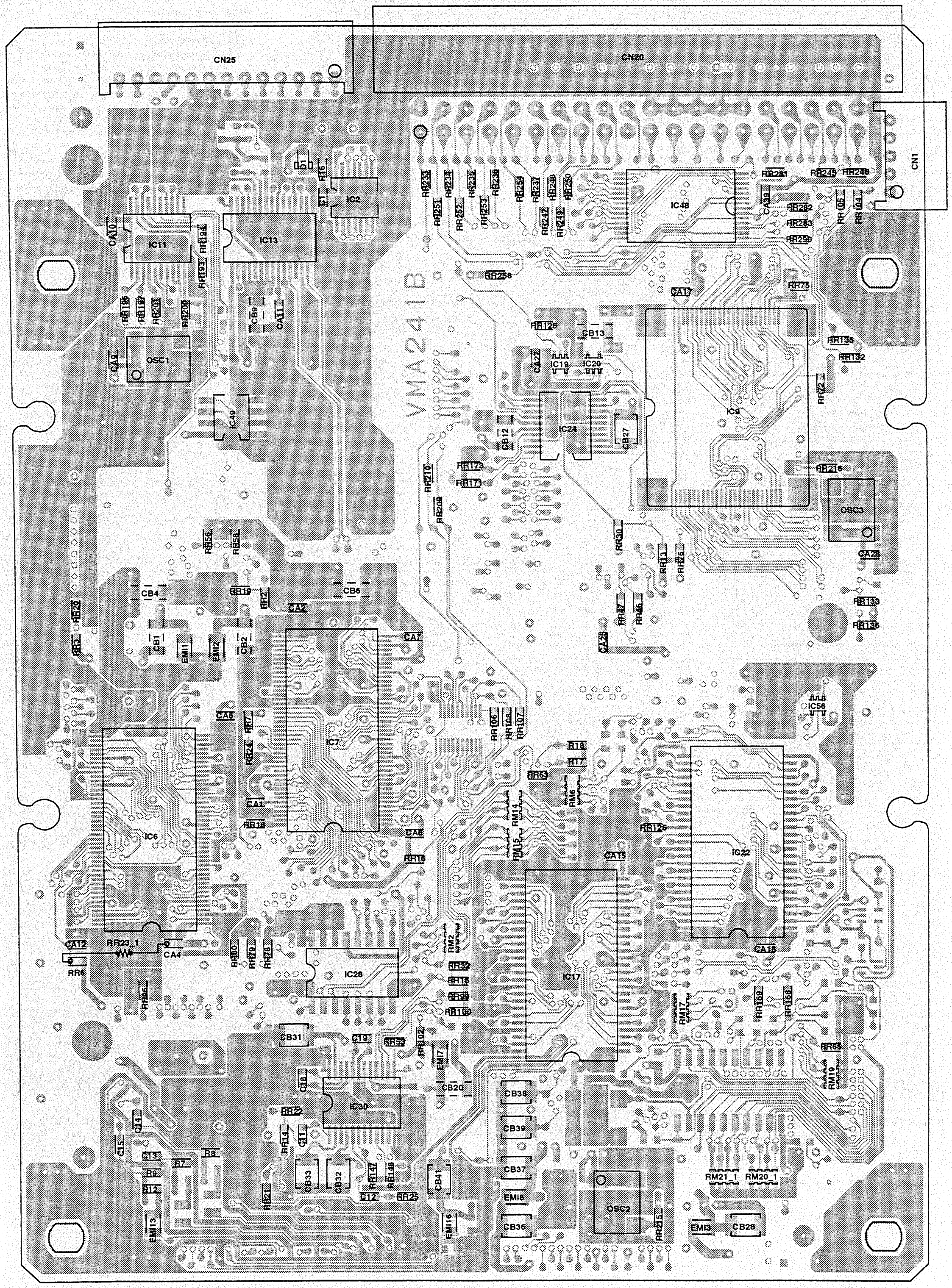
PRITED CIRCUIT BOARDS

HD MPEG (TOP)


VMA241B
IC26
IC1
IC16
IC35
IC31
IC36
IC25
IC53
IC54
IC23
IC18
OSC4
CN11_1
CB22
CB21
CB16
CB14
CB15
CB11
CB10
CB40
CB5
CB35
CB19
CB18
CA37
CA36
CA20
CA24
CA29
CA14
CA13
CA18
CA23
CA33
RM3
RM4
RM11
RM10
RM16
RM7
RM8
RM1
EMI4
EMI5
EMI15
EMI25
EMI10
RR244
RR242
RR259
RR263
RR145
RR251
RR254
RR241
RR239
RR243
RR255
RR256
RR262
RR257
RR240
RR238
RR186
RR187
RR202
RR222
RR207
RR123
RR124
RR214
RR213
RR150
RR95
C10
C17
C30
C16
R3
R13
R19
R24
157
105
53
1
108

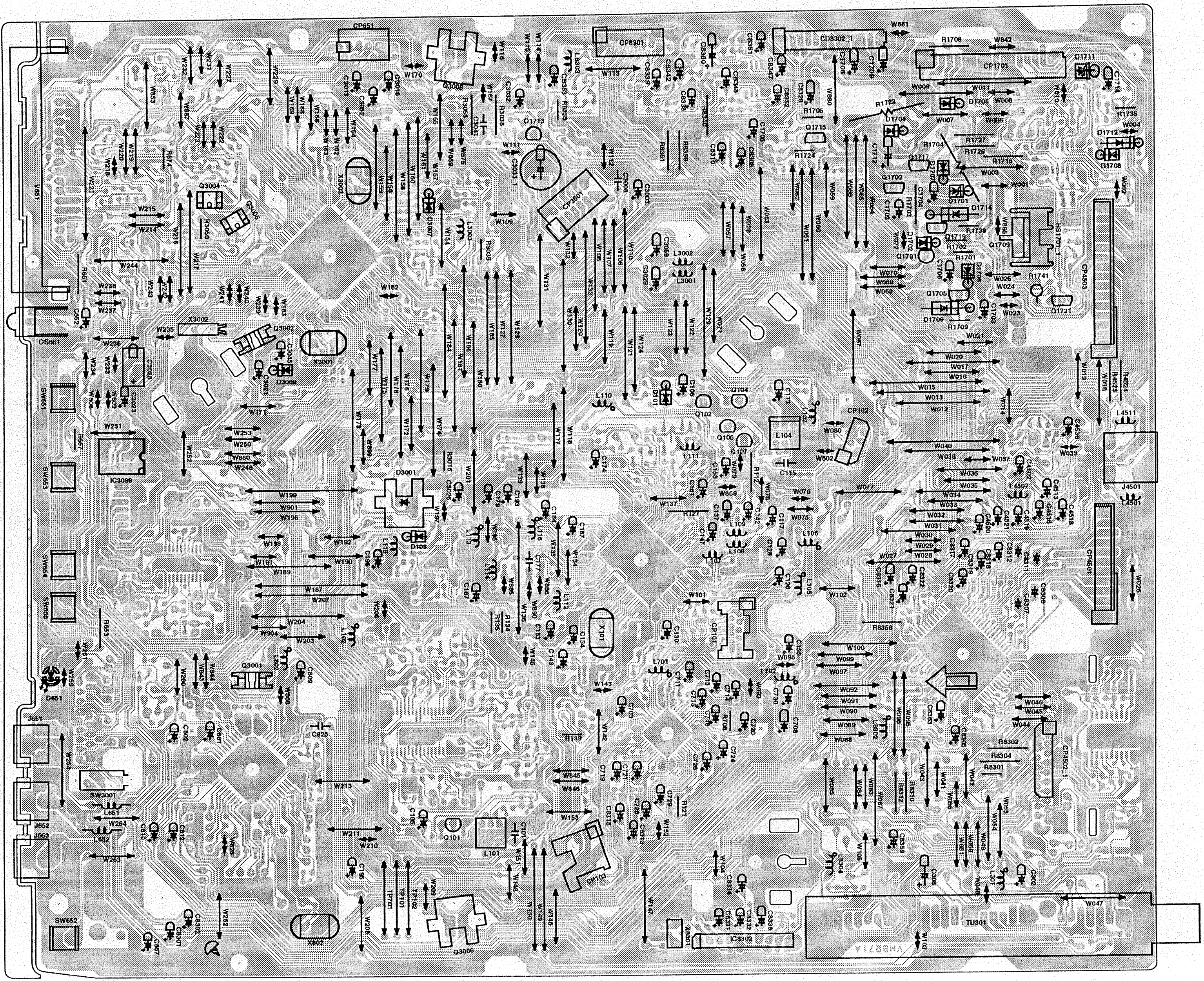
PRITED CIRCUIT BOARDS

HD MPEG (BOTTOM)

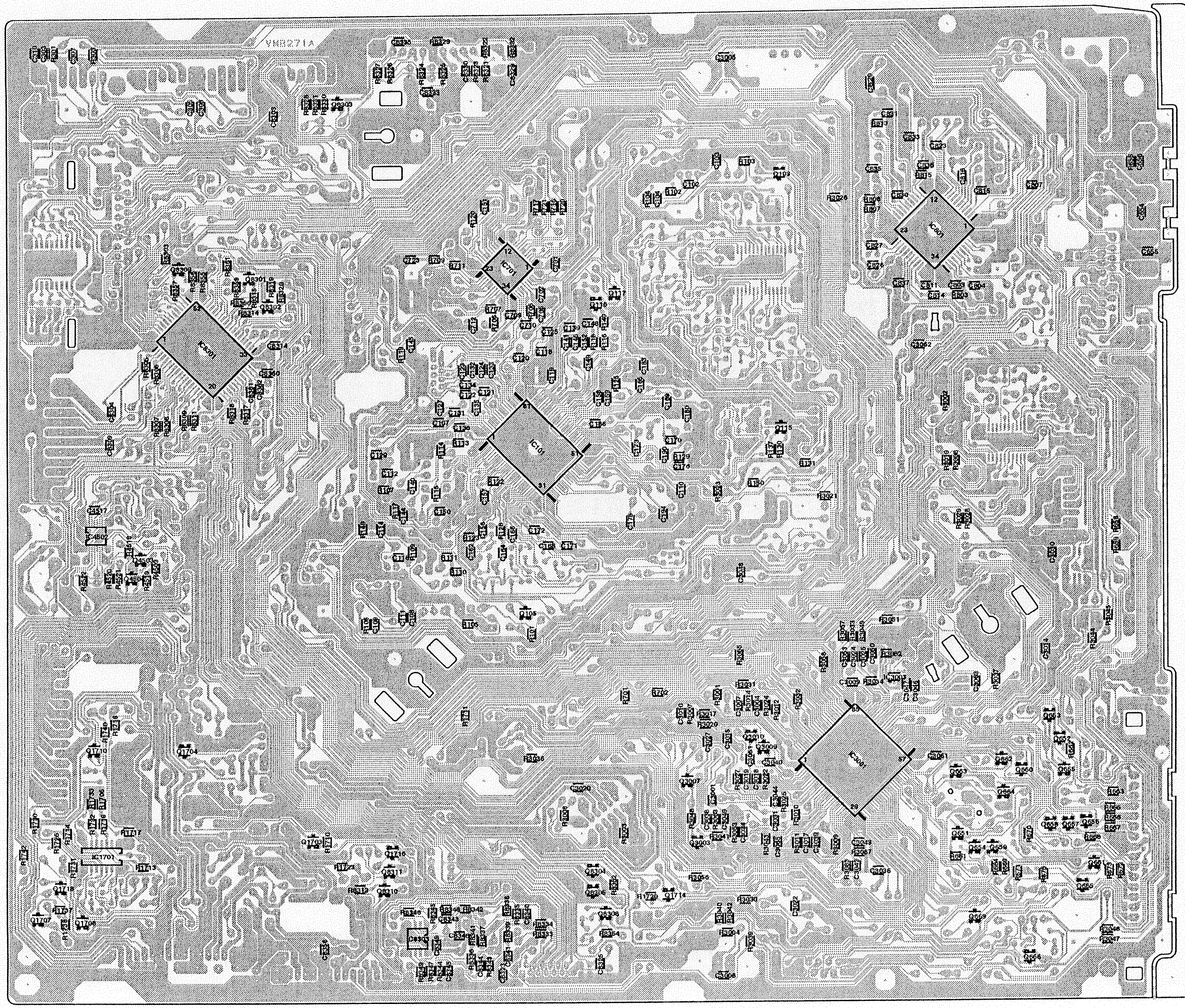


CN25
CN20
CN1
VMA241B
IC2
IC11
IC13
IC48
OSC1
IC49
CB13
IC19
IC20
IC24
IC9
OSC3
CB4
CB6
CB1
EMI1
EMI2
CB2
IC56
IC7
IC6
IC22
IC17
IC28
CB31
IC30
CB20
CB38
CB39
CB37
EMI8
CB36
OSC2
CB33
CB32
CB41
EMI13
EMI16
EMI3
CB26
RM21_1
RM20_1
RR23_1
CA4
RR6
CA12
CA18
CA13
CA17
CA28
CA7
CA2

PRINTED CIRCUIT BOARDS
VCR (INSERTED PARTS)
SOLDER SIDE


CP451
CP8301
CD8302_1
CP1701
D1711
CP3001
IC3099
X3001
X3002
X101
X802
SW651
SW652
SW653
SW654
SW656
DS651
D451
J651
J652
J653
J4501
L4501
L4511
Q3001
Q3006
Q101
L101
L104
CP102
CP101
CP103
CR4001
CP4601
CP4502_1
D3001
IC8302
TU301
VM8271A

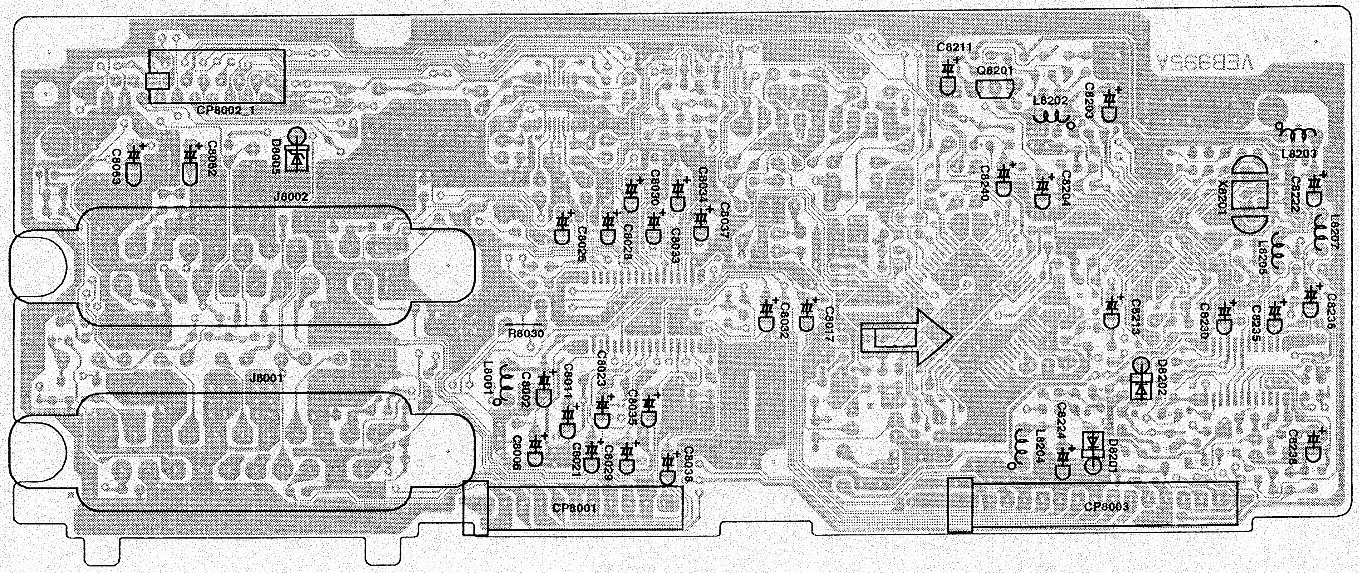
PRINTED CIRCUIT BOARDS
VCR (CHIP MOUNTED PARTS)
SOLDER SIDE


VMB271A
IC8301
IC701
IC101
IC3001
IC1701

PRINTED CIRCUIT BOARDS

REAR JACK (INSERTED PARTS)

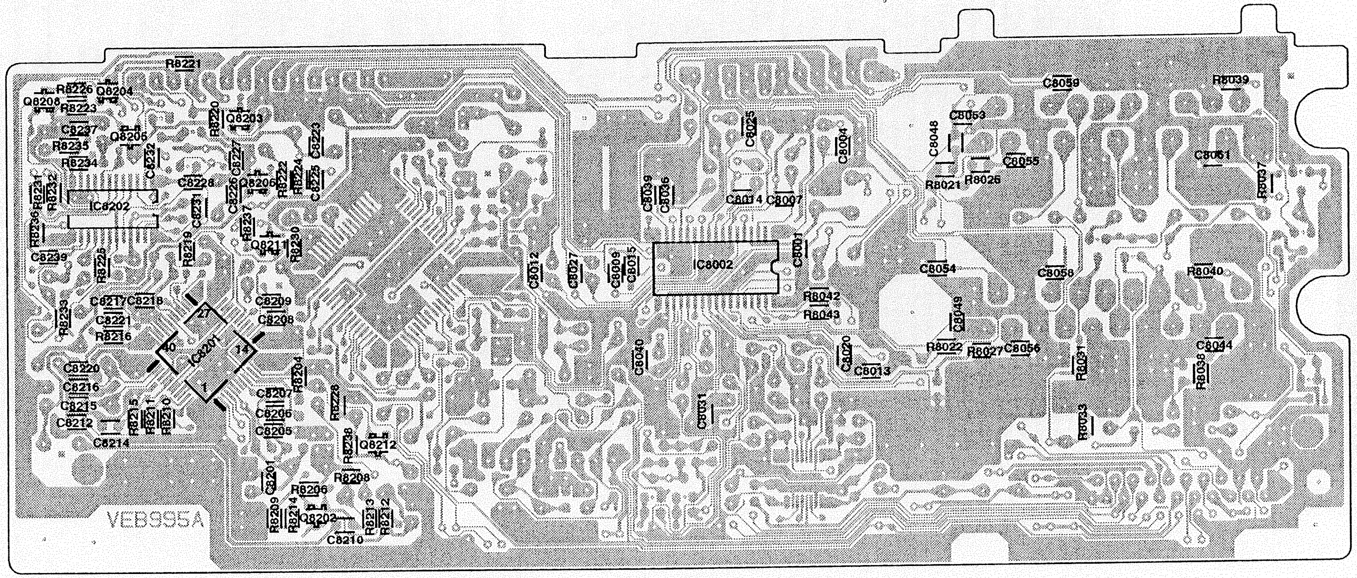
SOLDER SIDE


CP8002_1
C8063
C8062
D8005
J8002
J8001
R8030
L8001
C8002
C8011
C8023
C8006
C8021
C8029
C8035
C8038
CP8001
C8026
C8028
C8030
C8033
C8034
C8037
C8032
C8017
C8211
Q8201
L8202
C8203
VEB995A
L8203
C8240
C8204
X8201
C8222
L8207
L8205
C8213
C8230
C8235
C8236
D8202
C8224
L8204
D8201
C8238
CP8003

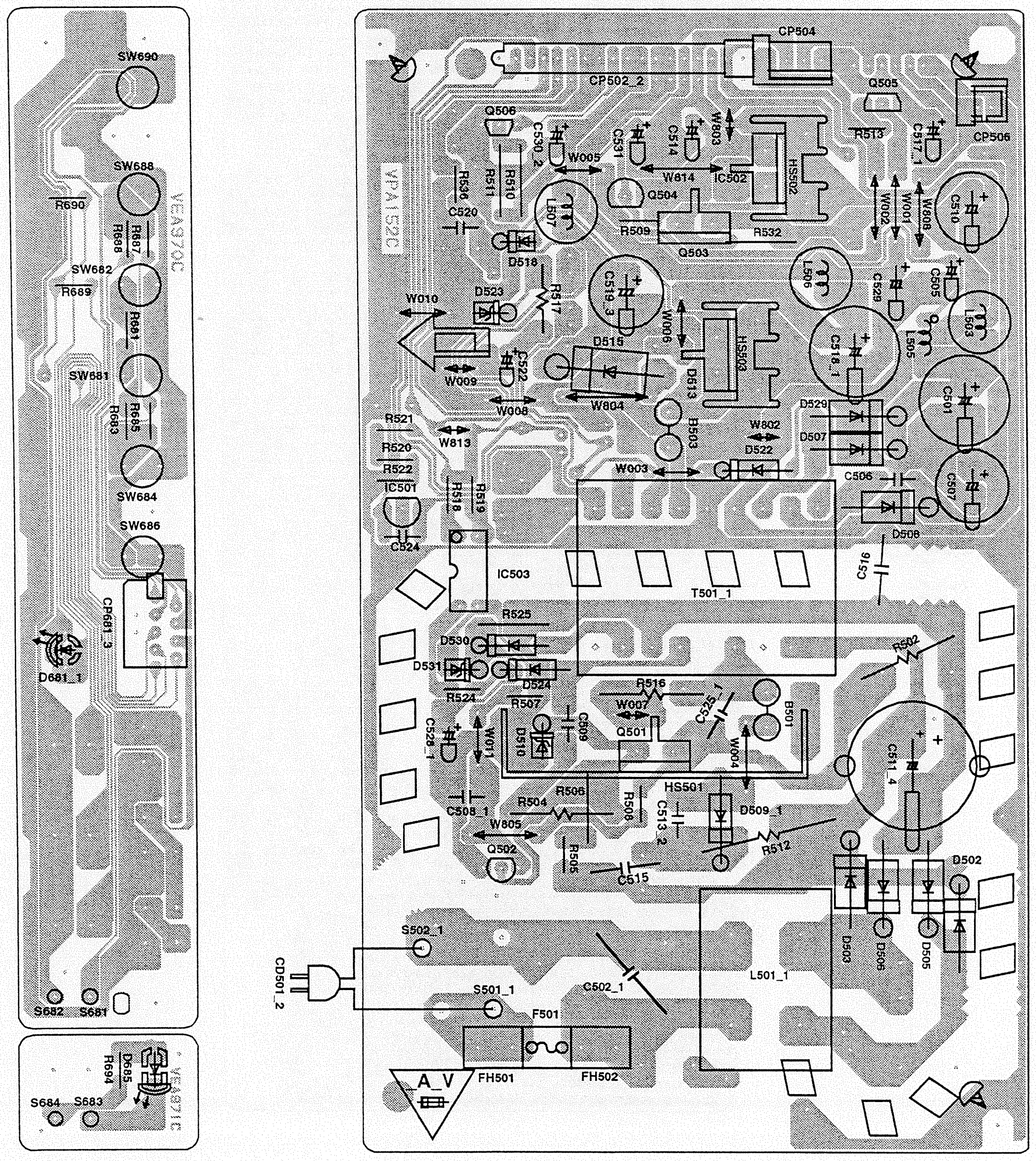
PRINTED CIRCUIT BOARDS

REAR JACK (CHIP MOUNTED PARTS)

SOLDER SIDE

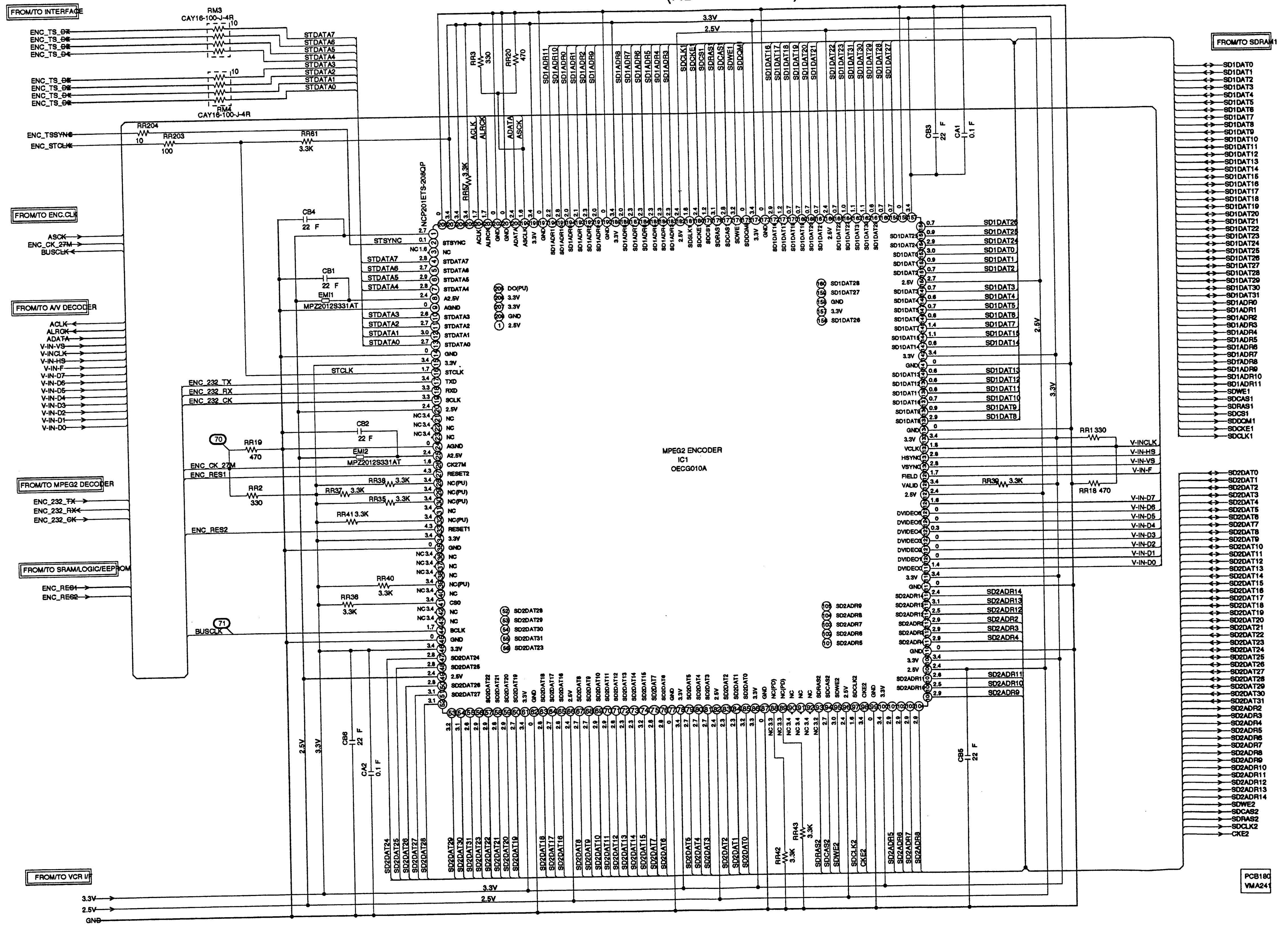

R8221
R8226
Q8204
Q8208
R8223
C8237
Q8205
R8235
R8234
C8232
R8220
Q8203
C8227
C8223
C8228
C8226
Q8206
R8222
R8224
C8225
R8231
R8232
IC8202
R8236
C8231
R8237
Q8211
R8230
R8219
C8239
R8225
R8233
C8217
C8218
C8221
R8216
C8209
C8208
27
40
IC8201
14
1
C8220
C8216
C8215
C8212
C8214
R8215
R8211
R8210
R8204
C8207
C8206
C8205
R8228
R8238
Q8212
C8201
R8208
R8206
R8209
R8214
Q8202
R8213
R8212
C8210
VEB995A
C8012
C8027
C8009
C8015
C8039
C8036
C8025
C8014
C8007
C8004
IC8002
C8001
R8042
R8043
C8040
C8031
C8020
C8013
C8048
C8053
C8055
R8021
R8026
C8054
C8049
R8022
R8027
C8056
C8059
C8058
R8031
R8033
R8039
C8061
R8037
R8040
C8044
R8038

PRINTED CIRCUIT BOARDS
OPERATION/LED/POWER
SOLDER SIDE


VEA970C
SW690
SW688
R690
R687
R688
SW682
R689
R681
SW681
R685
R683
SW684
SW686
CP681_3
D681_1
S682
S681
VEA971C
D685
R694
S684
S683
VPA152C
CP504
CP502_2
Q505
R513
C517_1
CP506
Q506
C530_2
C531
C514
W803
W005
W614
IC502
HS502
W002
W001
W808
C510
R536
R511
R510
L507
Q504
R509
R532
Q503
C520
D518
C519_3
L506
C529
C505
L503
W010
D523
R517
W006
HS503
L505
C518_1
D515
D513
C501
W009
C522
W008
W804
B503
D529
D507
R521
W813
W802
D522
R520
R522
W003
C506
C507
IC501
R518
R519
D508
C524
IC503
C516
T501_1
R525
R502
D530
D531
D524
R516
R524
R507
W007
C525_1
B501
C528_1
W011
D510
C509
Q501
W004
C511_4
HS501
R506
R508
C508_1
R504
C513_2
D509_1
W805
R512
Q502
R505
C515
D502
S502_1
D503
D506
D505
CD501_2
S501_1
C502_1
L501_1
F501
A_V
FH501
FH502

MPEG2 ENCODER SCHEMATIC DIAGRAM

(HD MPEG PCB)



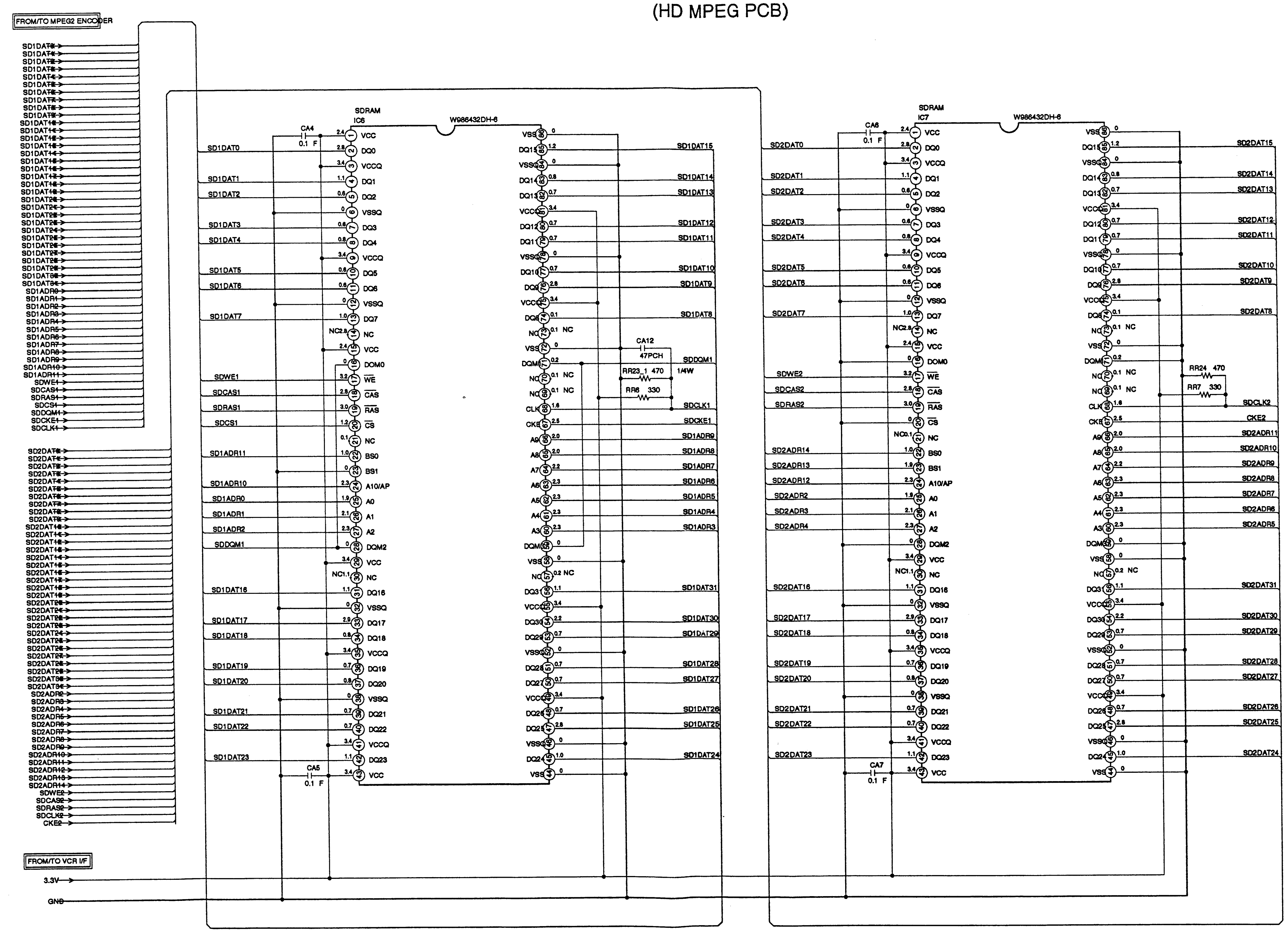
FROM/TO INTERFACE
RM3
CAY16-100-J-4R
ENC_TS_D7
ENC_TS_D6
ENC_TS_D5
ENC_TS_D4
ENC_TS_D3
ENC_TS_D2
ENC_TS_D1
ENC_TS_D0
RM4
CAY16-100-J-4R
STDATA7
STDATA6
STDATA5
STDATA4
STDATA3
STDATA2
STDATA1
STDATA0
ENC_TSSYNC
ENC_STCLK
RR204
10
RR203
100
RR81
3.3K
FROM/TO ENC.CLK
ASCK
ENC_CK_27M
BUSCLK
FROM/TO A/V DECODER
ACLK
ALRCK
ADATA
V-IN-VS
V-INCLK
V-IN-HS
V-IN-F
V-IN-D7
V-IN-D6
V-IN-D5
V-IN-D4
V-IN-D3
V-IN-D2
V-IN-D1
V-IN-D0
FROM/TO MPEG2 DECODER
ENC_232_TX
ENC_232_RX
ENC_232_CK
FROM/TO SRAM/LOGIC/EEPROM
ENC_RES1
ENC_RES2
FROM/TO VCR I/F
3.3V
2.5V
GND
CB4
22 F
CB1
22 F
EMI1
MPZ2012S331AT
CB2
22 F
EMI2
MPZ2012S331AT
RR19
470
RR2
330
RR37 3.3K
RR38 3.3K
RR35 3.3K
RR41 3.3K
RR40
3.3K
RR36
3.3K
RR3
330
RR20
470
RR5 3.3K
NCP201ET3-208QP
MPEG2 ENCODER
IC1
OECG010A
CB3
22 F
CA1
0.1 F
CB6
22 F
CA2
0.1 F
CB5
22 F
RR42
3.3K
RR43
3.3K
RR1 330
RR39 3.3K
RR18 470
FROM/TO SDRAM1
SD1DAT0–SD1DAT31
SD1ADR0–SD1ADR11
SDWE1
SDCAS1
SDRAS1
SDCS1
SDDQM1
SDCKE1
SDCLK1
SD2DAT0–SD2DAT31
SD2ADR2–SD2ADR14
SDWE2
SDCAS2
SDRAS2
SDCLK2
CKE2
PCB180
VMA241

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

SDRAM1 SCHEMATIC DIAGRAM

(HD MPEG PCB)


FROM/TO MPEG2 ENCODER
FROM/TO VCR I/F
3.3V
GND
SDRAM
IC6
W986432DH-6
SDRAM
IC7
W986432DH-6
CA4
0.1 F
CA5
0.1 F
CA6
0.1 F
CA7
0.1 F
CA12
47PCH
RR23_1 470
1/4W
RR6 330
RR24 470
RR7 330
VCC
DQ0
VCCQ
DQ1
DQ2
VSSQ
DQ3
DQ4
DQ5
DQ6
DQ7
NC
DQM0
WE
CAS
RAS
CS
BS0
BS1
A10/AP
A0
A1
A2
DQM2
DQ16
DQ17
DQ18
DQ19
DQ20
DQ21
DQ22
DQ23
VSS
DQ15
DQ14
DQ13
DQ12
DQ11
DQ10
DQ9
DQ8
DQM1
CLK
CKE
A9
A8
A7
A6
A5
A4
A3
DQM3
DQ31
DQ30
DQ29
DQ28
DQ27
DQ26
DQ25
DQ24
SD1DAT0
SD1DAT15
SDWE1
SDCAS1
SDRAS1
SDCS1
SDDQM1
SDCLK1
SDCKE1
SD1ADR11
SD1ADR10
SD2DAT0
SD2DAT15
SDWE2
SDCAS2
SDRAS2
SDCLK2
CKE2
SD2ADR14
SD2ADR13
SD2ADR12

PCB18
VMA24

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

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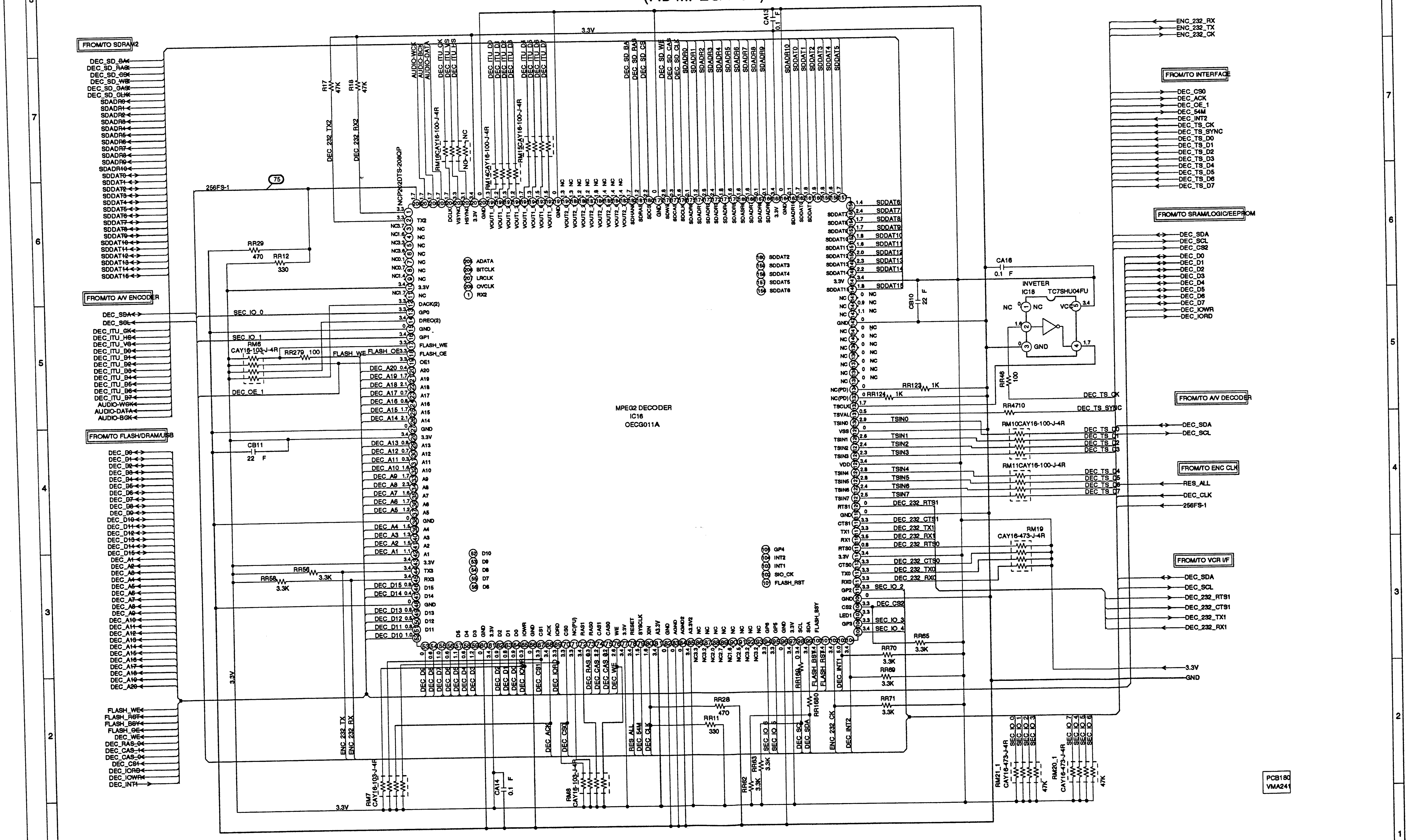
MPEG2 DECODER SCHEMATIC DIAGRAM

(HD MPEG PCB)

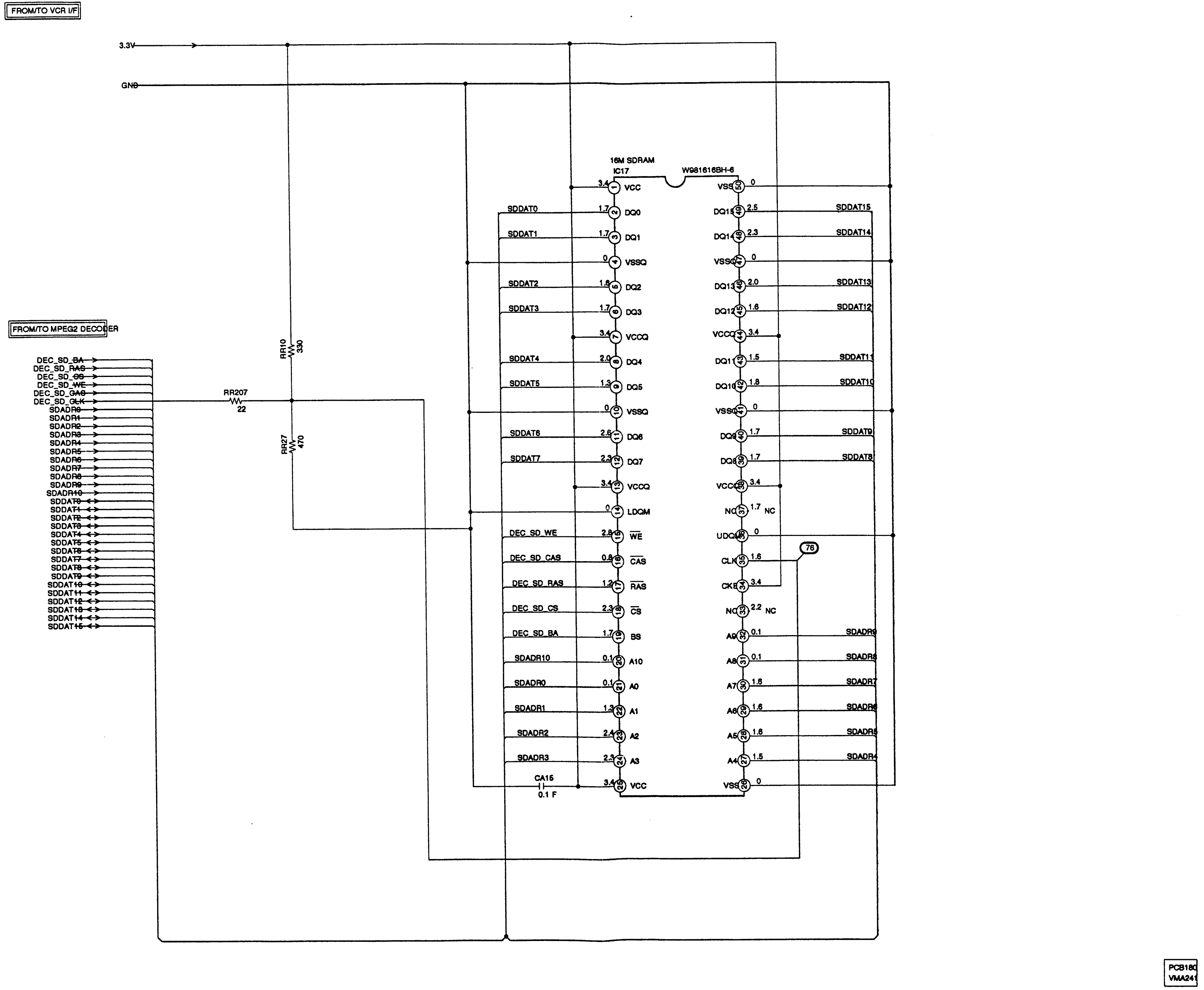

FROM/TO SDRAM2
FROM/TO A/V ENCODER
FROM/TO FLASH/DRAM/USB
FROM/TO MPEG2 ENCODER
ENC_232_RX
ENC_232_TX
ENC_232_CK
FROM/TO INTERFACE
FROM/TO SRAM/LOGIC/EEPROM
FROM/TO A/V DECODER
FROM/TO ENC CLK
RES_ALL
DEC_CLK
256FS-1
FROM/TO VCR I/F
DEC_SDA
DEC_SCL
DEC_232_RTS1
DEC_232_CTS1
DEC_232_TX1
DEC_232_RX1
3.3V
GND
MPEG2 DECODER
IC16
OECG011A
INVETER
IC18
TC7SHU04FU
CA16
0.1 F
CB10
22 F
CB11
22 F
CA14
0.1 F
RR29
470
RR12
330
RR279
100
RR56
3.3K
RR58
3.3K
RR123
1K
RR124
1K
RR48
100
RR4710
RM10CAY16-100-J-4R
RM11CAY16-100-J-4R
RM19
CAY16-473-J-4R
RR65
3.3K
RR70
3.3K
RR69
3.3K
RR71
3.3K
RR28
470
RR11
330
RR62
3.3K
RR63
3.3K
RM6
CAY16-103-J-4R
RM7
CAY16-103-J-4R
RM8
CAY16-103-J-4R
RM21_1
CAY16-473-J-4R
RM20_1
CAY16-473-J-4R
47K
R17
47K
R18
47K
DEC_232_TX2
DEC_232_RX2
ENC_232_TX
ENC_232_RX
ENC_232_CK
DEC_INT2
PCB180
VMA241

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

SDRAM2 SCHEMATIC DIAGRAM

(HD MPEG PCB)

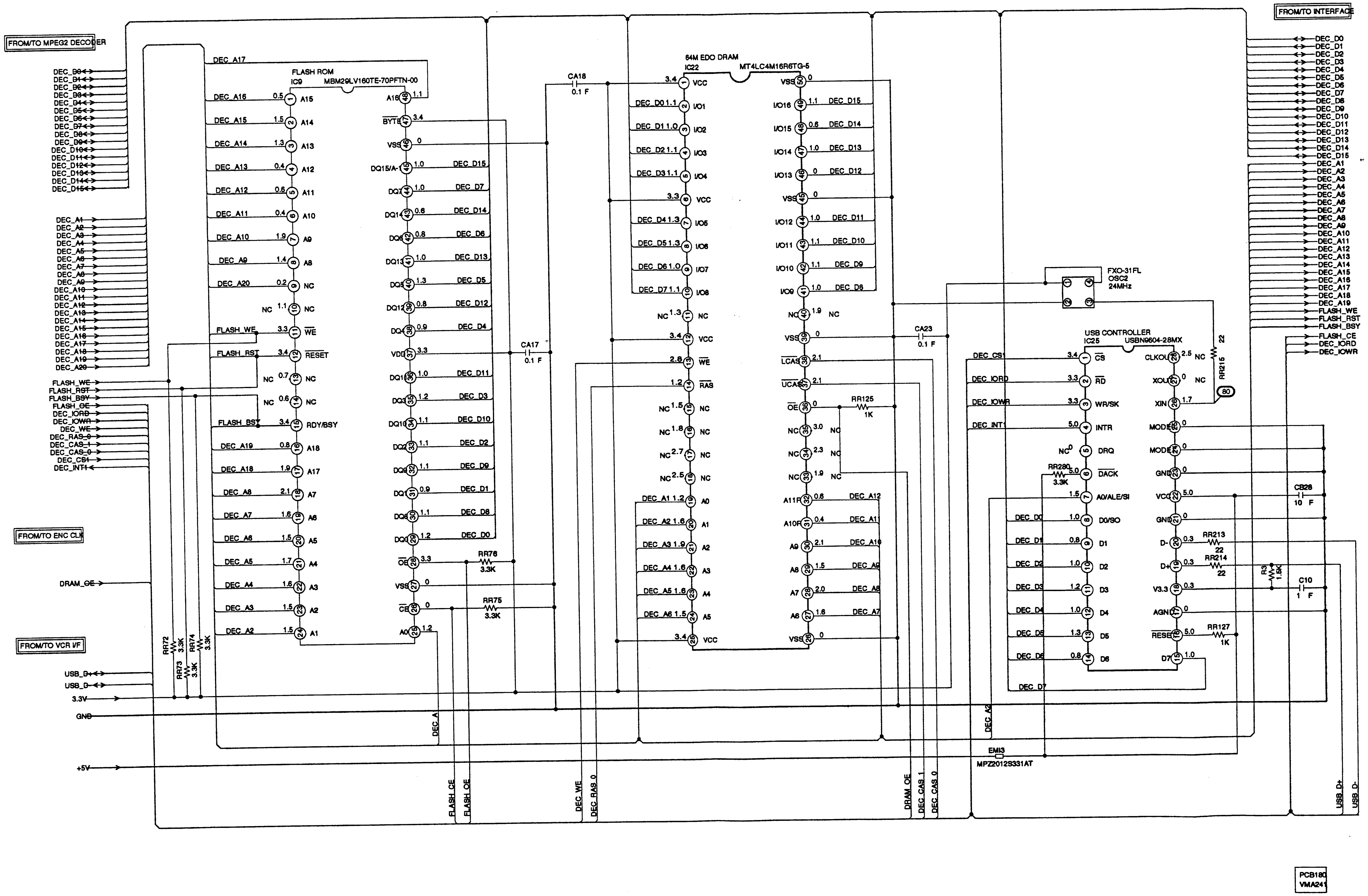

FROM/TO VCR I/F
3.3V
GND
FROM/TO MPEG2 DECODER
DEC_SD_BA
DEC_SD_RAS
DEC_SD_CS
DEC_SD_WE
DEC_SD_CAS
DEC_SD_CLK
SDADR0
SDADR1
SDADR2
SDADR3
SDADR4
SDADR5
SDADR6
SDADR7
SDADR8
SDADR9
SDADR10
SDDAT0
SDDAT1
SDDAT2
SDDAT3
SDDAT4
SDDAT5
SDDAT6
SDDAT7
SDDAT8
SDDAT9
SDDAT10
SDDAT11
SDDAT12
SDDAT13
SDDAT14
SDDAT15
RR10
330
RR207
22
RR27
470
16M SDRAM
IC17
W981616BH-6
3.4 1 VCC
SDDAT0 1.7 2 DQ0
SDDAT1 1.7 3 DQ1
0 4 VSSQ
SDDAT2 1.8 5 DQ2
SDDAT3 1.7 6 DQ3
3.4 7 VCCQ
SDDAT4 2.0 8 DQ4
SDDAT5 1.3 9 DQ5
0 10 VSSQ
SDDAT6 2.6 11 DQ6
SDDAT7 2.3 12 DQ7
3.4 13 VCCQ
0 14 LDQM
DEC_SD_WE 2.8 15 WE
DEC_SD_CAS 0.8 16 CAS
DEC_SD_RAS 1.2 17 RAS
DEC_SD_CS 2.3 18 CS
DEC_SD_BA 1.7 19 BS
SDADR10 0.1 20 A10
SDADR0 0.1 21 A0
SDADR1 1.3 22 A1
SDADR2 2.4 23 A2
SDADR3 2.3 24 A3
CA15
0.1 F
3.4 25 VCC
VSS 50 0
DQ15 49 2.5 SDDAT15
DQ14 48 2.3 SDDAT14
VSSQ 47 0
DQ13 46 2.0 SDDAT13
DQ12 45 1.6 SDDAT12
VCCQ 44 3.4
DQ11 43 1.5 SDDAT11
DQ10 42 1.8 SDDAT10
VSSQ 41 0
DQ9 40 1.7 SDDAT9
DQ8 39 1.7 SDDAT8
VCCQ 38 3.4
NC 37 1.7 NC
UDQM 36 0
CLK 35 1.6
76
CKE 34 3.4
NC 33 2.2 NC
A9 32 0.1 SDADR9
A8 31 0.1 SDADR8
A7 30 1.6 SDADR7
A6 29 1.6 SDADR6
A5 28 1.6 SDADR5
A4 27 1.5 SDADR4
VSS 26 0
PCB18
VMA24

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

FLASH/DRAM/USB SCHEMATIC DIAGRAM

(HD MPEG PCB)


FROM/TO MPEG2 DECODER
FROM/TO INTERFACE
FROM/TO ENC CLK
FROM/TO VCR I/F
FLASH ROM
IC9 MBM29LV160TE-70PFTN-00
64M EDO DRAM
IC22 MT4LC4M16R6TG-5
USB CONTROLLER
IC25 USBN9604-28MX
FXO-31FL
OSC2
24MHz
CA18 0.1 F
CA17 0.1 F
CA23 0.1 F
CB28 10 F
C10 1 F
RR72 3.3K
RR73 3.3K
RR74 3.3K
RR75 3.3K
RR76 3.3K
RR125 1K
RR127 1K
RR213 22
RR214 22
RR215 22
RR280 3.3K
R3 1.5K
EMI3
MPZ2012S331AT
DEC_D0 … DEC_D15
DEC_A1 … DEC_A20
FLASH_WE
FLASH_RST
FLASH_BSY
FLASH_OE
FLASH_CE
DEC_IORD
DEC_IOWR
DEC_WE
DEC_RAS_0
DEC_CAS_1
DEC_CAS_0
DEC_CS1
DEC_INT1
DRAM_OE
USB_D+
USB_D-
3.3V
GND
+5V
VCC
VSS
WE
RAS
LCAS
UCAS
OE
CS
RD
WR/SK
INTR
DRQ
DACK
A0/ALE/SI
D0/SO
D1
D2
D3
D4
D5
D6
D7
CLKOUT
XOUT
XIN
MODE1
MODE0
GND
D-
D+
V3.3
AGND
RESET
RDY/BSY
BYTE
RESET
NC
PCB180
VMA241

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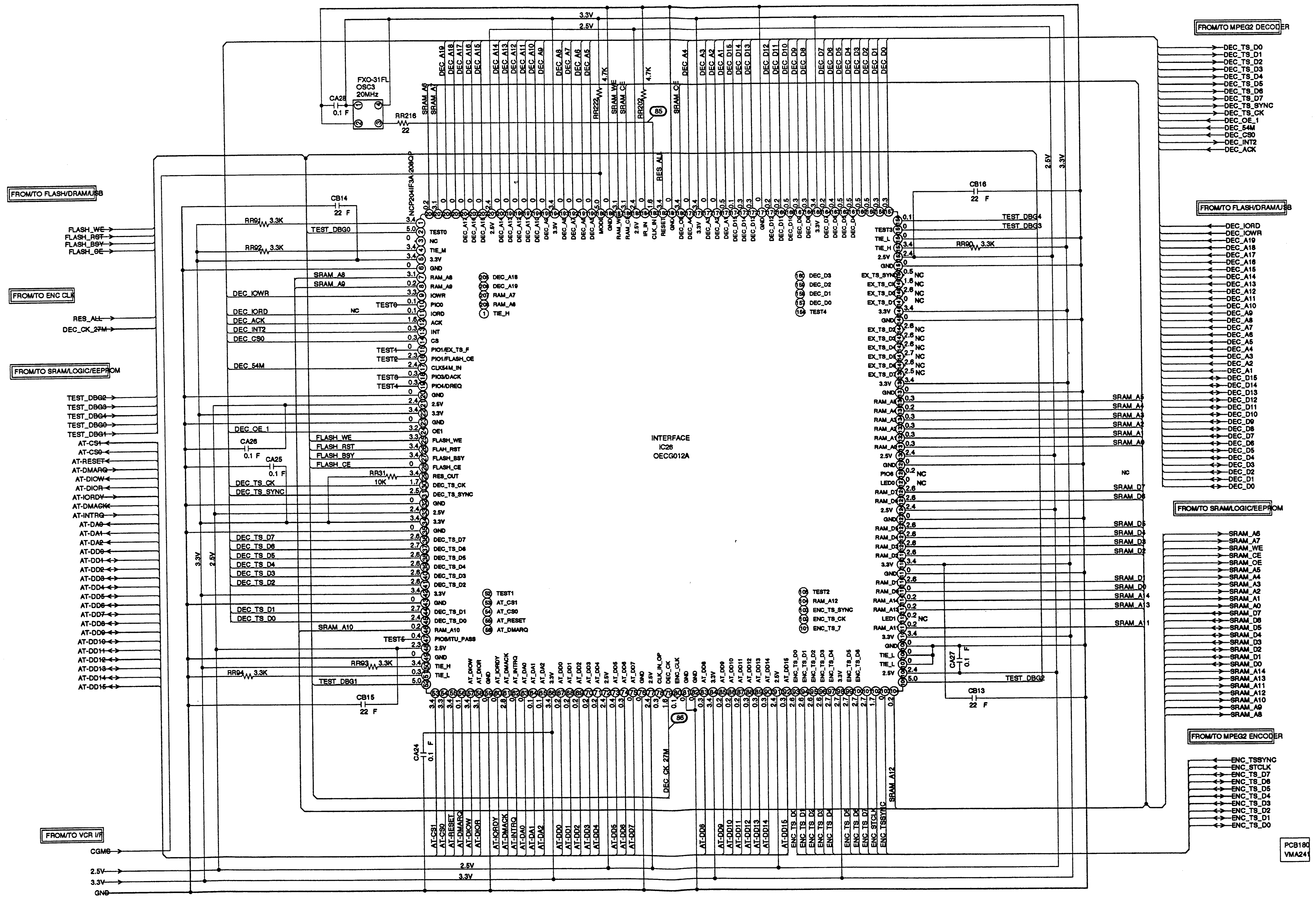
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

INTERFACE SCHEMATIC DIAGRAM

(HD MPEG PCB)

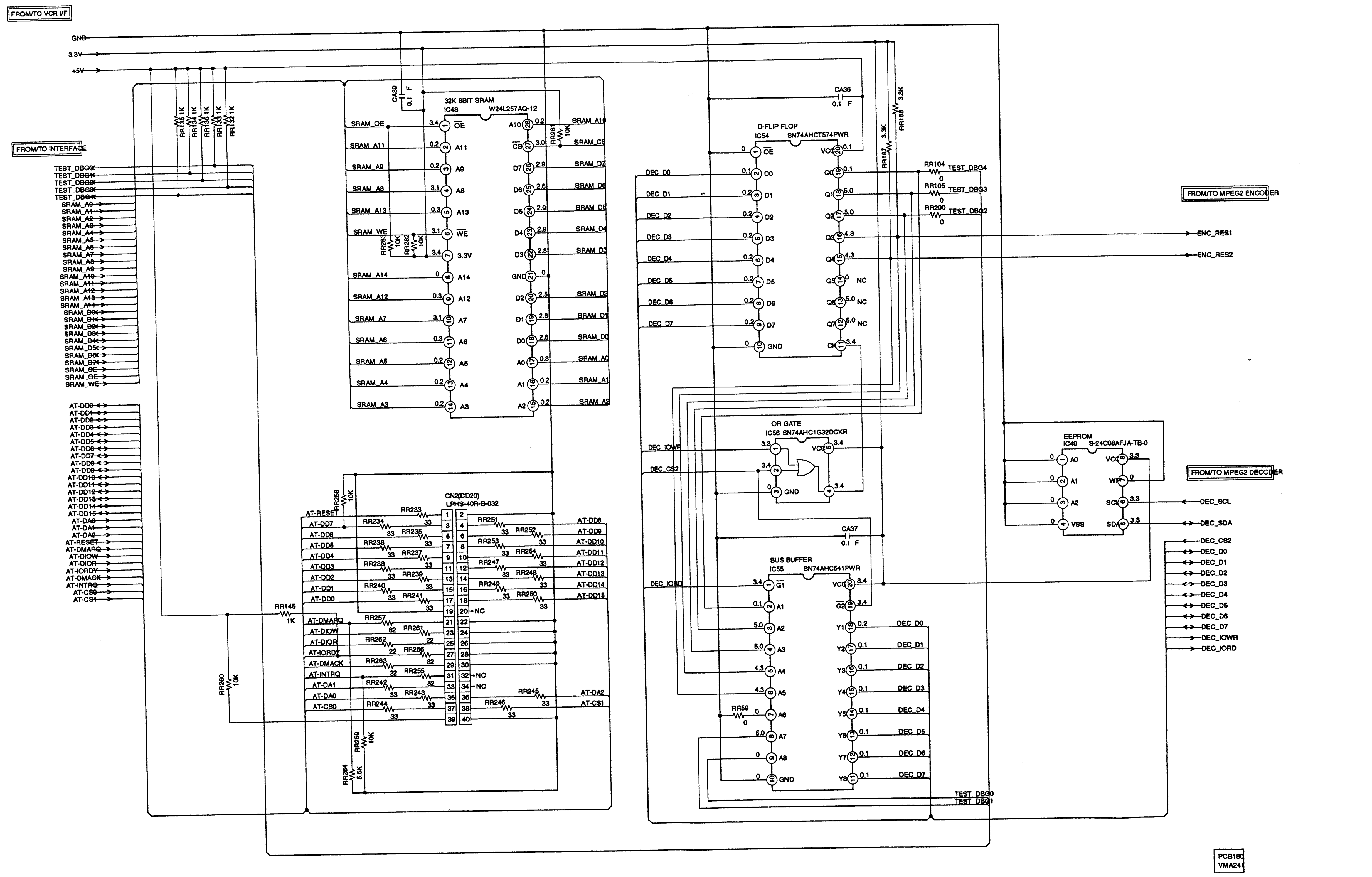

FROM/TO MPEG2 DECODER
FROM/TO FLASH/DRAM/USB
FROM/TO ENC CLK
FROM/TO SRAM/LOGIC/EEPROM
FROM/TO MPEG2 ENCODER
FROM/TO VCR I/F
INTERFACE
IC26
OECG012A
NCP2041F3A 208QP
FXO-31FL
OSC3
20MHz
CA28
0.1 F
RR216
22
CB14
22 F
CB15
22 F
CB16
22 F
CB13
22 F
CA24
0.1 F
CA25
0.1 F
CA26
0.1 F
CA27
0.1 F
RR91 3.3K
RR92 3.3K
RR93 3.3K
RR94 3.3K
RR90 3.3K
RR31 10K
RR222 4.7K
RR220 4.7K
3.3V
2.5V
GND
CGMS
DEC_CK_27M
RES_ALL
PCB180
VMA241

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

SRAM/LOGIC/EEPROM SCHEMATIC DIAGRAM

(HD MPEG PCB)

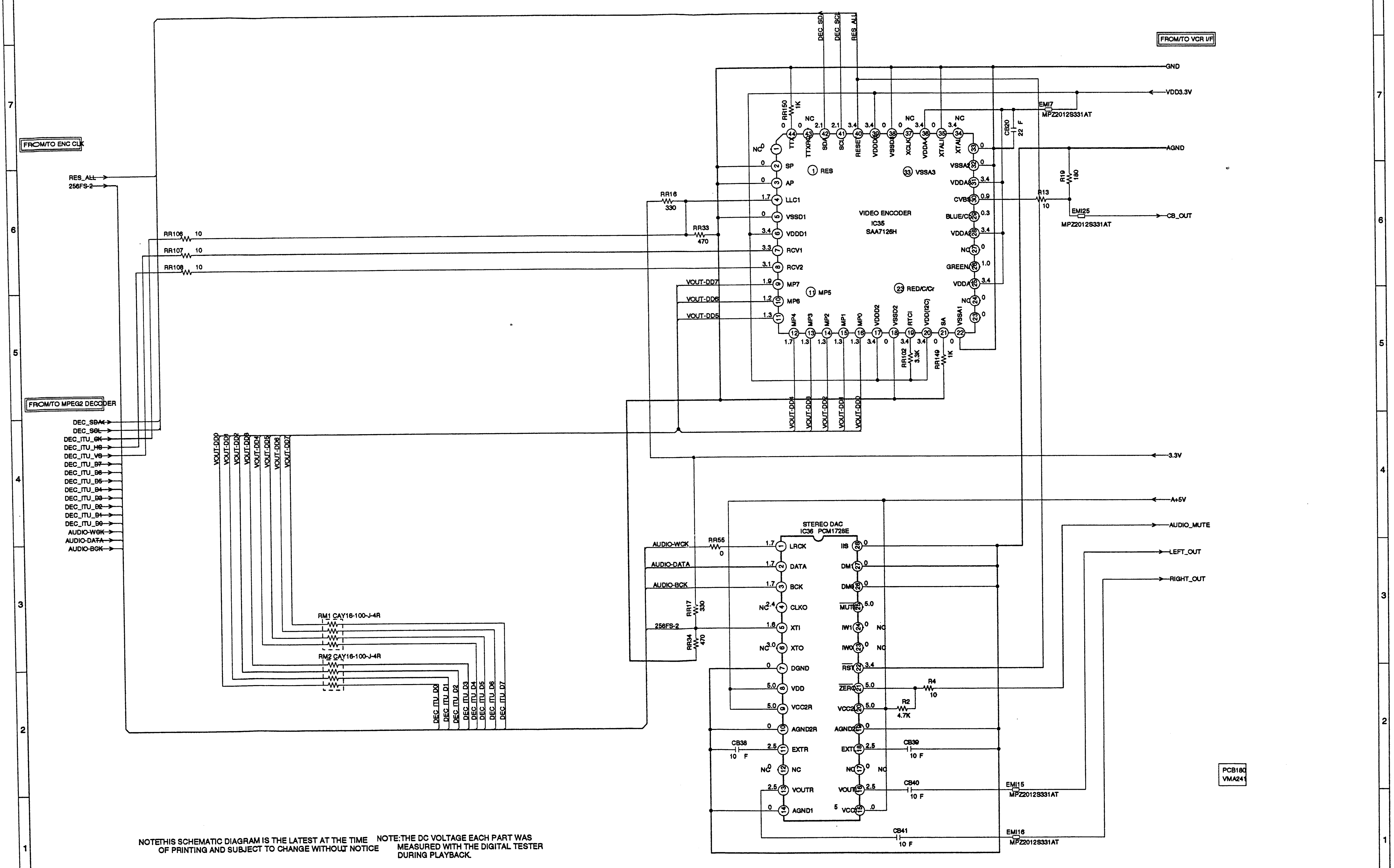

FROM/TO VCR I/F
GND
3.3V
+5V
FROM/TO INTERFACE
TEST_DBG0
TEST_DBG1
TEST_DBG2
TEST_DBG3
TEST_DBG4
SRAM_A0
SRAM_A1
SRAM_A2
SRAM_A3
SRAM_A4
SRAM_A5
SRAM_A6
SRAM_A7
SRAM_A8
SRAM_A9
SRAM_A10
SRAM_A11
SRAM_A12
SRAM_A13
SRAM_A14
SRAM_D0
SRAM_D1
SRAM_D2
SRAM_D3
SRAM_D4
SRAM_D5
SRAM_D6
SRAM_D7
SRAM_OE
SRAM_CE
SRAM_WE
AT-DD0
AT-DD1
AT-DD2
AT-DD3
AT-DD4
AT-DD5
AT-DD6
AT-DD7
AT-DD8
AT-DD9
AT-DD10
AT-DD11
AT-DD12
AT-DD13
AT-DD14
AT-DD15
AT-DA0
AT-DA1
AT-DA2
AT-RESET
AT-DMARQ
AT-DIOW
AT-DIOR
AT-IORDY
AT-DMACK
AT-INTRQ
AT-CS0
AT-CS1
RR135 1K
RR134 1K
RR136 1K
RR133 1K
RR132 1K
CA39
0.1 F
32K 8BIT SRAM
IC48 W24L257AQ-12
OE
A11
A9
A8
A13
WE
3.3V
A14
A12
A7
A6
A5
A4
A3
A10
CS
D7
D6
D5
D4
D3
GND
D2
D1
D0
A0
A1
A2
RR281 10K
RR283 10K
RR282 10K
CN2(CD20)
LPHS-40R-B-032
RR258 10K
RR233
RR234
RR235
RR236
RR237
RR238
RR239
RR240
RR241
RR251
RR252
RR253
RR254
RR247
RR248
RR249
RR250
RR257
RR261
RR262
RR256
RR263
RR255
RR242
RR243
RR244
RR245
RR246
33
82
22
NC
RR145 1K
RR260 10K
RR259 10K
RR264 5.6K
CA36
0.1 F
RR187 3.3K
RR188 3.3K
D-FLIP FLOP
IC54 SN74AHCT574PWR
OE
D0
D1
D2
D3
D4
D5
D6
D7
GND
VCC
Q0
Q1
Q2
Q3
Q4
Q5
Q6
Q7
CK
DEC_D0
DEC_D1
DEC_D2
DEC_D3
DEC_D4
DEC_D5
DEC_D6
DEC_D7
RR104
RR105
RR290
TEST_DBG4
TEST_DBG3
TEST_DBG2
ENC_RES1
ENC_RES2
FROM/TO MPEG2 ENCODER
OR GATE
IC56 SN74AHC1G32DCKR
DEC_IOWR
DEC_CS2
VCC
GND
EEPROM
IC49 S-24C08AFJA-TB-0
A0
A1
A2
VSS
VCC
WP
SCL
SDA
FROM/TO MPEG2 DECODER
DEC_SCL
DEC_SDA
DEC_CS2
DEC_D0
DEC_D1
DEC_D2
DEC_D3
DEC_D4
DEC_D5
DEC_D6
DEC_D7
DEC_IOWR
DEC_IORD
CA37
0.1 F
BUS BUFFER
IC55 SN74AHC541PWR
G1
A1
A2
A3
A4
A5
A6
A7
A8
GND
VCC
G2
Y1
Y2
Y3
Y4
Y5
Y6
Y7
Y8
DEC_IORD
RR59
TEST_DBG0
TEST_DBG1
PCB180
VMA241

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

A/V ENCODER SCHEMATIC DIAGRAM

(HD MPEG PCB)


FROM/TO ENC CLK
RES_ALL
256FS-2
FROM/TO MPEG2 DECODER
DEC_SDA
DEC_SCL
DEC_ITU_CK
DEC_ITU_HS
DEC_ITU_VS
DEC_ITU_B7
DEC_ITU_B6
DEC_ITU_B5
DEC_ITU_B4
DEC_ITU_B3
DEC_ITU_B2
DEC_ITU_B1
DEC_ITU_B0
AUDIO-WCK
AUDIO-DATA
AUDIO-BCK
RR106 10
RR107 10
RR108 10
RR16 330
RR33 470
RR150 1K
RR102 3.3K
RR149 1K
VIDEO ENCODER
IC35
SAA7126H
SP
AP
LLC1
VSSD1
VDDD1
RCV1
RCV2
MP7
MP6
MP5
RES
VSSA3
RED/C/Cr
CVBS
BLUE/C
GREEN
XTAL
XCLK
RESET
SDA
SCL
TTX
TTXRQ
CB20 22 F
EMI7 MPZ2012S331AT
R19 180
R13 10
EMI25 MPZ2012S331AT
FROM/TO VCR I/F
GND
VDD3.3V
AGND
CB_OUT
3.3V
A+5V
AUDIO_MUTE
LEFT_OUT
RIGHT_OUT
VOUT-DD0
VOUT-DD1
VOUT-DD2
VOUT-DD3
VOUT-DD4
VOUT-DD5
VOUT-DD6
VOUT-DD7
RM1 CAY16-100-J-4R
RM2 CAY16-100-J-4R
DEC_ITU_D0
DEC_ITU_D1
DEC_ITU_D2
DEC_ITU_D3
DEC_ITU_D4
DEC_ITU_D5
DEC_ITU_D6
DEC_ITU_D7
STEREO DAC
IC36 PCM1728E
RR55 0
RR17 330
RR34 470
LRCK
DATA
BCK
CLKO
XTI
XTO
DGND
VDD
VCC2R
AGND2R
EXTR
NC
VOUTR
AGND1
IIS
DM1
DM0
MUTE
IWI
IWO
RST
ZERO
VCC2L
AGND2L
EXTL
VOUTL
VCC1
R4 10
R2 4.7K
CB38 10 F
CB39 10 F
CB40 10 F
CB41 10 F
EMI15 MPZ2012S331AT
EMI16 MPZ2012S331AT
PCB180
VMA241

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

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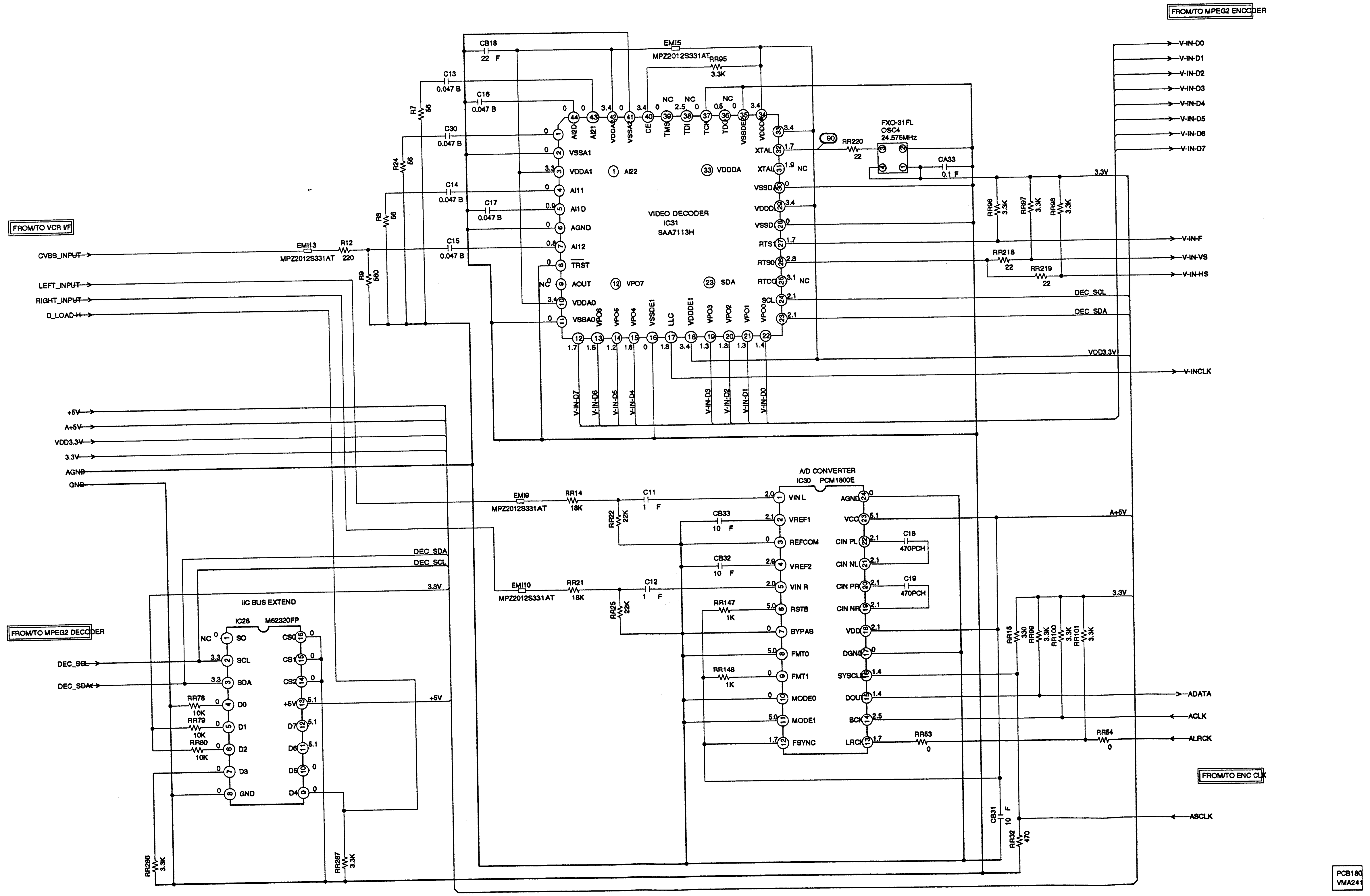
VIDEO/AUDIO DECODER SCHEMATIC DIAGRAM

(HD MPEG PCB)

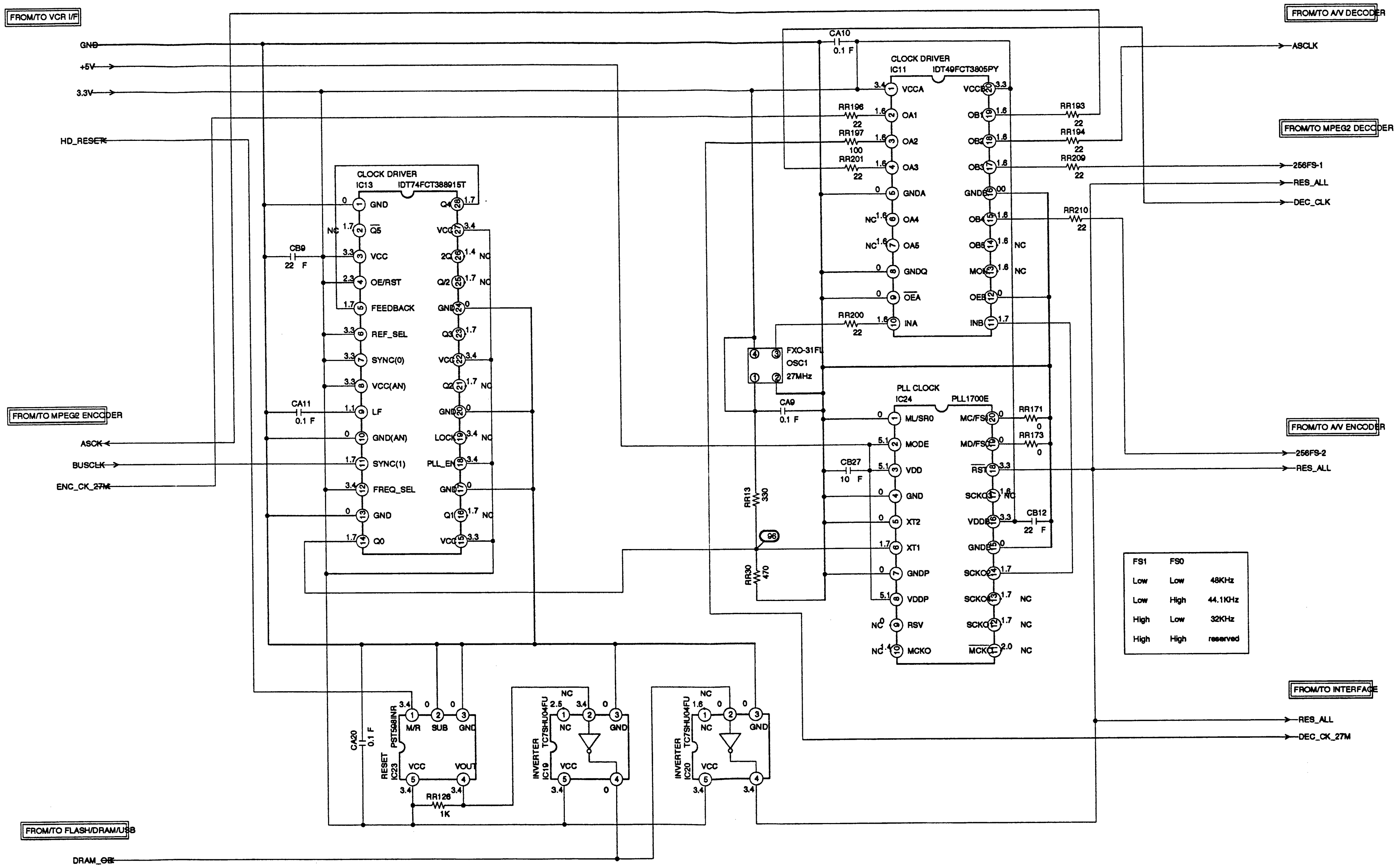

FROM/TO MPEG2 ENCODER
FROM/TO VCR I/F
FROM/TO MPEG2 DECODER
FROM/TO ENC CLK
CVBS_INPUT
LEFT_INPUT
RIGHT_INPUT
D_LOAD-H
+5V
A+5V
VDD3.3V
3.3V
AGND
GND
DEC_SCL
DEC_SDA
EMI13 MPZ2012S331AT
EMI15 MPZ2012S331AT
EMI9 MPZ2012S331AT
EMI10 MPZ2012S331AT
VIDEO DECODER IC31 SAA7113H
FXO-31FL OSC4 24.576MHz
CA33 0.1 F
RR220 22
RR218 22
RR219 22
RR95 3.3K
RR96 3.3K
RR97 3.3K
RR98 3.3K
CB18 22 F
C13 0.047 B
C16 0.047 B
C30 0.047 B
C14 0.047 B
C17 0.047 B
C15 0.047 B
R7 56
R24 56
R8 56
R9 560
R12 220
AI2D
AI21
VDDA2
VSSA2
CE
TMS
TDI
TCK
TDO
VSSDE
VDDDE
XTAL
XTALI
VSSDI
VDDDI
RTS1
RTS0
RTCO
SCL
SDA
VSSA1
VDDA1
AI11
AI1D
AGND
AI12
TRST
AOUT
VDDA0
VSSA0
VPO7
VPO6
VPO5
VPO4
VSSDE1
LLC
VDDDE1
VPO3
VPO2
VPO1
VPO0
AI22
VDDDA
NC
V-IN-D0
V-IN-D1
V-IN-D2
V-IN-D3
V-IN-D4
V-IN-D5
V-IN-D6
V-IN-D7
V-IN-F
V-IN-VS
V-IN-HS
V-INCLK
A/D CONVERTER IC30 PCM1800E
VIN L
VREF1
REFCOM
VREF2
VIN R
RSTB
BYPAS
FMT0
FMT1
MODE0
MODE1
FSYNC
AGND
VCC
CIN PL
CIN NL
CIN PR
CIN NR
VDD
DGND
SYSCLK
DOUT
BCK
LRCK
RR14 18K
RR21 18K
RR22 22K
RR25 22K
C11 1 F
C12 1 F
CB33 10 F
CB32 10 F
C18 470PCH
C19 470PCH
RR147 1K
RR148 1K
RR53 0
RR54 0
RR15 330
RR99 3.3K
RR100 3.3K
RR101 3.3K
CB31 10 F
RR32 470
ADATA
ACLK
ALRCK
ASCLK
IIC BUS EXTEND
IC28 M62320FP
SO
SCL
SDA
D0
D1
D2
D3
GND
CS0
CS1
CS2
+5V
D7
D6
D5
D4
RR78 10K
RR79 10K
RR80 10K
RR286 3.3K
RR287 3.3K
PCB180
VMA241

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

ENC CLK SCHEMATIC DIAGRAM

(HD MPEG PCB)



FROM/TO VCR I/F
GND
+5V
3.3V
HD_RESET
FROM/TO MPEG2 ENCODER
ASCK
BUSCLK
ENC_CK_27M
FROM/TO FLASH/DRAM/USB
DRAM_OE
CLOCK DRIVER
IC13 IDT74FCT388915T
GND
Q5
VCC
OE/RST
FEEDBACK
REF_SEL
SYNC(0)
VCC(AN)
LF
GND(AN)
SYNC(1)
FREQ_SEL
GND
Q0
Q4
VCC
2Q
Q/2
GND
Q3
VCC
Q2
GND
LOCK
PLL_EN
GND
Q1
VCC
CB9
22 F
CA11
0.1 F
CA10
0.1 F
CLOCK DRIVER
IC11 IDT49FCT3805PY
VCCA
OA1
OA2
OA3
GNDA
OA4
OA5
GNDQ
OEA
INA
VCCB
OB1
OB2
OB3
GNDB
OB4
OB5
MON
OEB
INB
RR196 22
RR197 100
RR201 22
RR200 22
RR193 22
RR194 22
RR209 22
RR210 22
FXO-31FL
OSC1
27MHz
CA9
0.1 F
PLL CLOCK
IC24 PLL1700E
ML/SR0
MODE
VDD
GND
XT2
XT1
GNDP
VDDP
RSV
MCKO
MC/FS1
MD/FS0
RST
SCKO3
VDDS
GNDS
SCKO2
SCKO1
SCKO0
MCKI
CB27
10 F
CB12
22 F
RR171
RR173
RR13 330
RR30 470
96
NC
FROM/TO A/V DECODER
ASCLK
FROM/TO MPEG2 DECODER
256FS-1
RES_ALL
DEC_CLK
FROM/TO A/V ENCODER
256FS-2
RES_ALL
FROM/TO INTERFACE
RES_ALL
DEC_CK_27M
RESET
IC23 PST598INR
M/R
SUB
GND
VCC
VOUT
CA20
0.1 F
RR126
1K
INVERTER
IC19 TC7SHU04FU
INVERTER
IC20 TC7SHU04FU

FS1	FS0	
Low	Low	48KHz
Low	High	44.1KHz
High	Low	32KHz
High	High	reserved

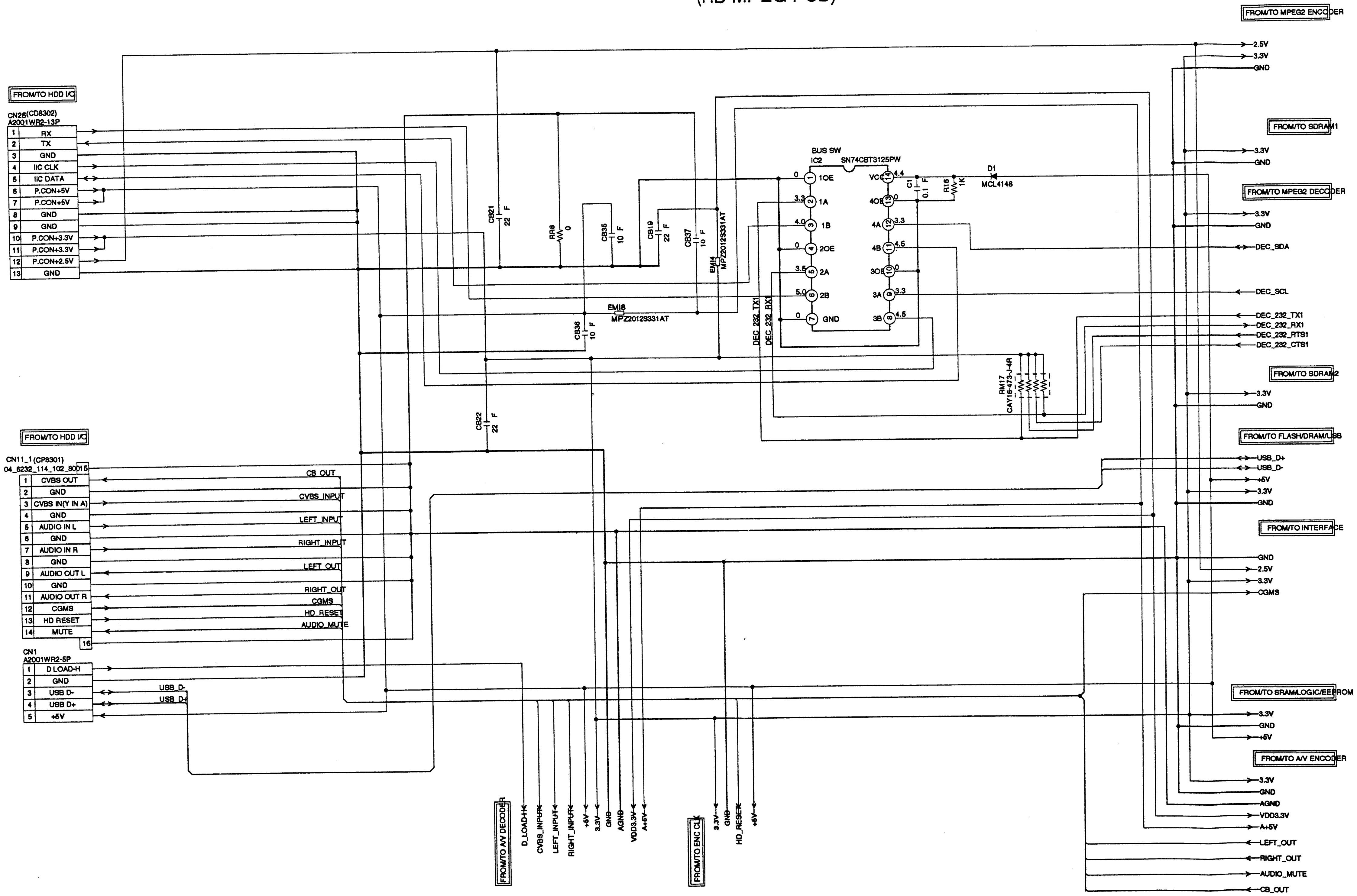
PCB180
VMA241

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

VCR I/F SCHEMATIC DIAGRAM

(HD MPEG PCB)


FROM/TO HDD I/O
CN25(CD8302)
A2001WR2-13P
1 RX
2 TX
3 GND
4 IIC CLK
5 IIC DATA
6 P.CON+5V
7 P.CON+5V
8 GND
9 GND
10 P.CON+3.3V
11 P.CON+3.3V
12 P.CON+2.5V
13 GND
CB21 22 F
RR8 0
CB35 10 F
CB19 22 F
CB37 10 F
EMI4 MPZ2012S331AT
EMI8 MPZ2012S331AT
CB38 10 F
CB22 22 F
BUS SW
IC2 SN74CBT3125PW
1OE
1A
1B
2OE
2A
2B
GND
VCC
4OE
4A
4B
3OE
3A
3B
C1 0.1 F
R16 1K
D1 MCL4148
DEC_232_TX1
DEC_232_RX1
RM17 CAY16-473-J-4R
FROM/TO MPEG2 ENCODER
2.5V
3.3V
GND
FROM/TO SDRAM1
3.3V
GND
FROM/TO MPEG2 DECODER
3.3V
GND
DEC_SDA
DEC_SCL
DEC_232_TX1
DEC_232_RX1
DEC_232_RTS1
DEC_232_CTS1
FROM/TO SDRAM2
3.3V
GND
FROM/TO FLASH/DRAM/USB
USB_D+
USB_D-
+5V
3.3V
GND
FROM/TO INTERFACE
GND
2.5V
3.3V
CGMS
FROM/TO HDD I/O
CN11_1 (CP8301)
04_6232_114_102_800
1 CVBS OUT
2 GND
3 CVBS IN(Y IN A)
4 GND
5 AUDIO IN L
6 GND
7 AUDIO IN R
8 GND
9 AUDIO OUT L
10 GND
11 AUDIO OUT R
12 CGMS
13 HD RESET
14 MUTE
15
16
CB_OUT
CVBS_INPUT
LEFT_INPUT
RIGHT_INPUT
LEFT_OUT
RIGHT_OUT
CGMS
HD_RESET
AUDIO_MUTE
CN1
A2001WR2-5P
1 D LOAD-H
2 GND
3 USB D-
4 USB D+
5 +5V
USB_D-
USB_D+
FROM/TO SRAM/LOGIC/EEPROM
3.3V
GND
+5V
FROM/TO A/V ENCODER
3.3V
GND
AGND
VDD3.3V
A+5V
LEFT_OUT
RIGHT_OUT
AUDIO_MUTE
CB_OUT
FROM/TO A/V DECODER
D_LOAD-H
CVBS_INPUT
LEFT_INPUT
RIGHT_INPUT
+5V
3.3V
GND
AGND
VDD3.3V
A+5V
FROM/TO ENC CLK
3.3V
GND
HD_RESET
+5V

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
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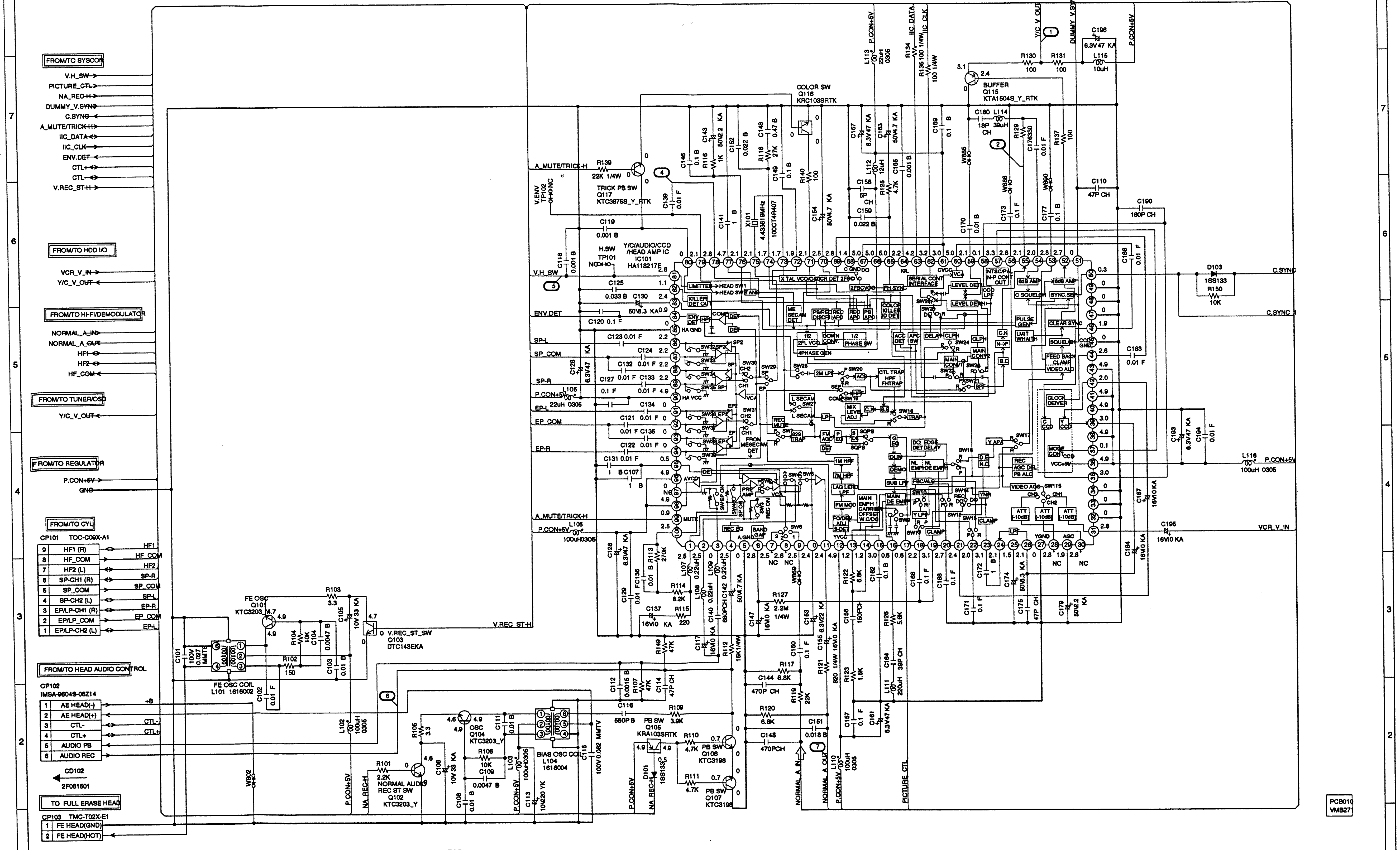
DURING PLAYBACK.

PCB180
VMA241

Y/C/AUDIO/HEAD AMP SCHEMATIC DIAGRAM

(VCR PCB)

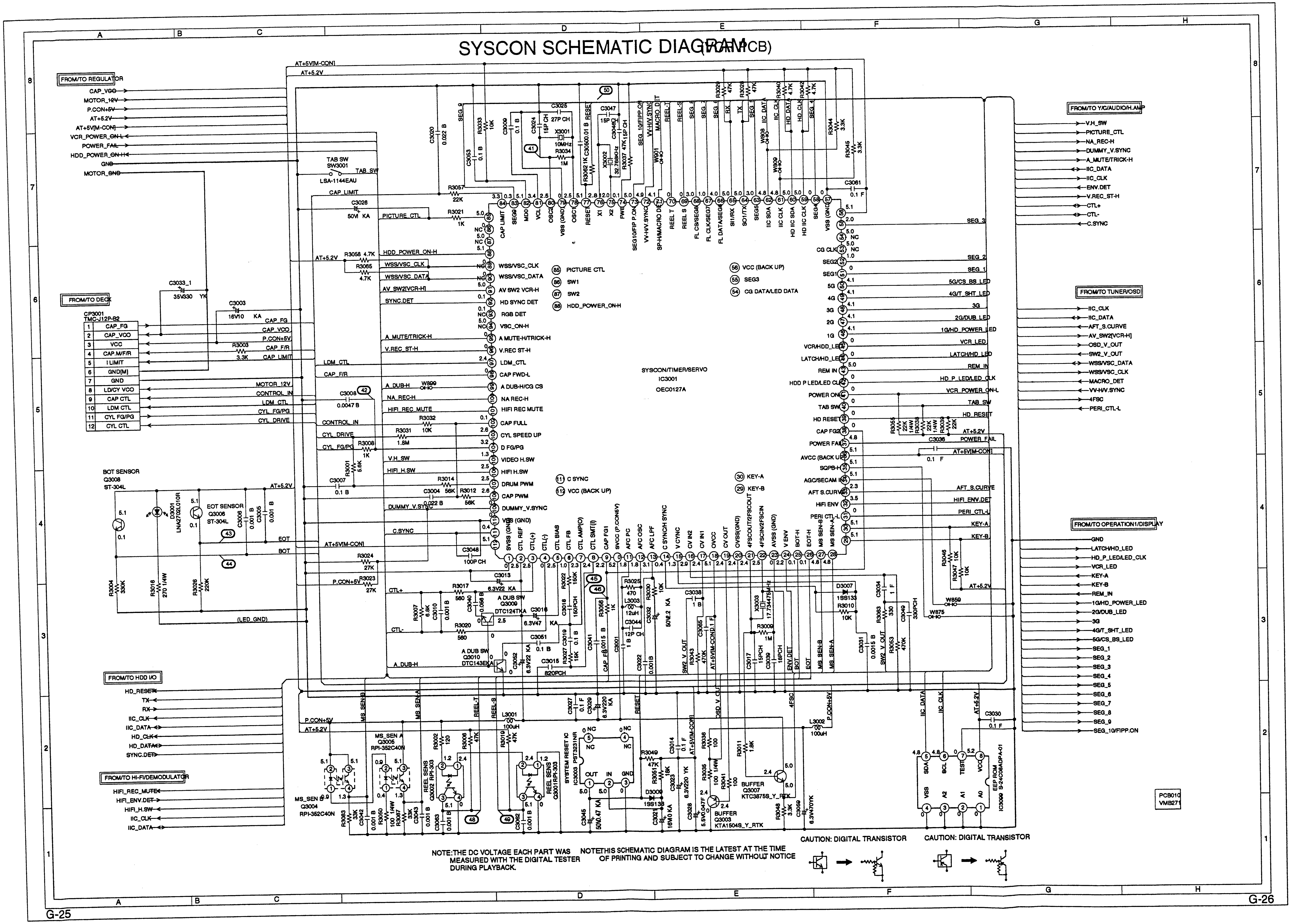

FROM/TO SYSCON
V.H_SW
PICTURE_CTL
NA_REC-H
DUMMY_V.SYNC
C.SYNC
A_MUTE/TRICK-H
IIC_DATA
IIC_CLK
ENV.DET
CTL+
CTL-
V.REC_ST-H
FROM/TO HDD I/O
VCR_V_IN
Y/C_V_OUT
FROM/TO HI-FI/DEMODULATOR
NORMAL_A_IN
NORMAL_A_OUT
HF1
HF2
HF_COM
FROM/TO TUNER/OSD
Y/C_V_OUT
FROM/TO REGULATOR
P.CON+5V
GND
FROM/TO CYL
CP101 TOC-C09X-A1
9 HF1 (R)
8 HF_COM
7 HF2 (L)
6 SP-CH1 (R)
5 SP_COM
4 SP-CH2 (L)
3 EP/LP-CH1 (R)
2 EP/LP_COM
1 EP/LP-CH2 (L)
FROM/TO HEAD AUDIO CONTROL
CP102
IMSA-9604S-06Z14
1 AE HEAD(-)
2 AE HEAD(+)
3 CTL-
4 CTL+
5 AUDIO PB
6 AUDIO REC
CD102
2F061501
TO FULL ERASE HEAD
CP103 TMC-T02X-E1
1 FE HEAD(GND)
2 FE HEAD(HOT)
FE OSC Q101 KTC3203
FE OSC COIL L101 1616002
V.REC_ST_SW Q103 DTC143EKA
OSC Q104 KTC3203_Y
BIAS OSC COIL L104 1616004
NORMAL AUDIO REC ST SW Q102 KTC3203_Y
PB SW Q105 KRA103SRTK
PB SW Q106 KTC3198
PB SW Q107 KTC3198
D101 1SS133
TRICK PB SW Q117 KTC3875S_Y_RTK
COLOR SW Q116 KRC103SRTK
BUFFER Q115 KTA1504S_Y_RTK
Y/C/AUDIO/CCD /HEAD AMP IC IC101 HA118217E
X101 4.433619MHz
D103 1SS133
R150 10K
L116 100uH 0305
VCR_V_IN
C.SYNC
P.CON+5V
PICTURE_CTL
NORMAL_A_IN
NORMAL_A_OUT
V.ENV
SP-L
SP_COM
SP-R
EP-L
EP_COM
EP-R
A_MUTE/TRICK-H
Y/C_V_OUT
DUMMY_V.SYNC
PCB010
VMB27

CAUTION: DIGITAL TRANSISTOR CAUTION: DIGITAL TRANSISTOR

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

SYSCON SCHEMATIC DIAGRAM (VMB PCB)



FROM/TO REGULATOR
CAP_VCC
MOTOR_12V
P.CON+5V
AT+5.2V
AT+5V[M-CON]
VCR_POWER_ON-L
POWER_FAIL
HDD_POWER_ON-H
GND
MOTOR_GND
FROM/TO DECK
CP3001
TMC-J12P-B2
1 CAP_FG
2 CAP_VCO
3 VCC
4 CAP.M/F/R
5 I LIMIT
6 GND[M]
7 GND
8 LD/CY VCO
9 CAP CTL
10 LDM CTL
11 CYL FG/PG
12 CYL CTL
BOT SENSOR
Q3008
ST-304L
EOT SENSOR
Q3006
ST-304L
D3001
LNA2702L01OR
TAB SW
SW3001
LSA-1144EAU
SYSCON/TIMER/SERVO
IC3001
OEC0127A
FROM/TO Y/C/AUDIO/H.AMP
V.H_SW
PICTURE_CTL
NA_REC-H
DUMMY_V.SYNC
A_MUTE/TRICK-H
IIC_DATA
IIC_CLK
ENV.DET
V.REC_ST-H
CTL+
CTL-
C.SYNC
FROM/TO TUNER/OSD
IIC_CLK
IIC_DATA
AFT_S.CURVE
AV_SW2[VCR-H]
OSD_V_OUT
SW2_V_OUT
WSS/VSC_DATA
WSS/VSC_CLK
MACRO_DET
VV-H/V.SYNC
4FSC
PERI_CTL-L
FROM/TO OPERATION1/DISPLAY
GND
LATCH/HD_LED
HD_P_LED/LED_CLK
VCR_LED
KEY-A
KEY-B
REM_IN
1G/HD_POWER_LED
2G/DUB_LED
3G
4G/T_SHT_LED
5G/CS_BS_LED
SEG_1
SEG_2
SEG_3
SEG_4
SEG_5
SEG_6
SEG_7
SEG_8
SEG_9
SEG_10/FIPP.ON
FROM/TO HDD I/O
HD_RESET
TX
RX
IIC_CLK
IIC_DATA
HD_CLK
HD_DATA
SYNC.DET
FROM/TO HI-FI/DEMODULATOR
HIFI_REC_MUTE
HIFI_ENV.DET
HIFI_H.SW
IIC_CLK
IIC_DATA
MS_SEN A
Q3005
RPI-352C40N
MS_SEN B
Q3004
RPI-352C40N
REEL SENS
Q3002 RPI-303
REEL SENS
Q3001 RPI-303
SYSTEM RESET IC
IC3003 PST3231NR
BUFFER
Q3007
KTC3875S_Y_RTK
BUFFER
Q3003
KTA1504S_Y_RTK
EEP ROM
IC3009 S-24C08ADPA-01
A DUB SW
Q3009
DTC124TKA
A DUB SW
Q3010
DTC143EKA
X3001
10MHz
X3002
32.768KHz
X3003
17.734475MHz
PCB010
VMB271
CAUTION: DIGITAL TRANSISTOR
CAUTION: DIGITAL TRANSISTOR

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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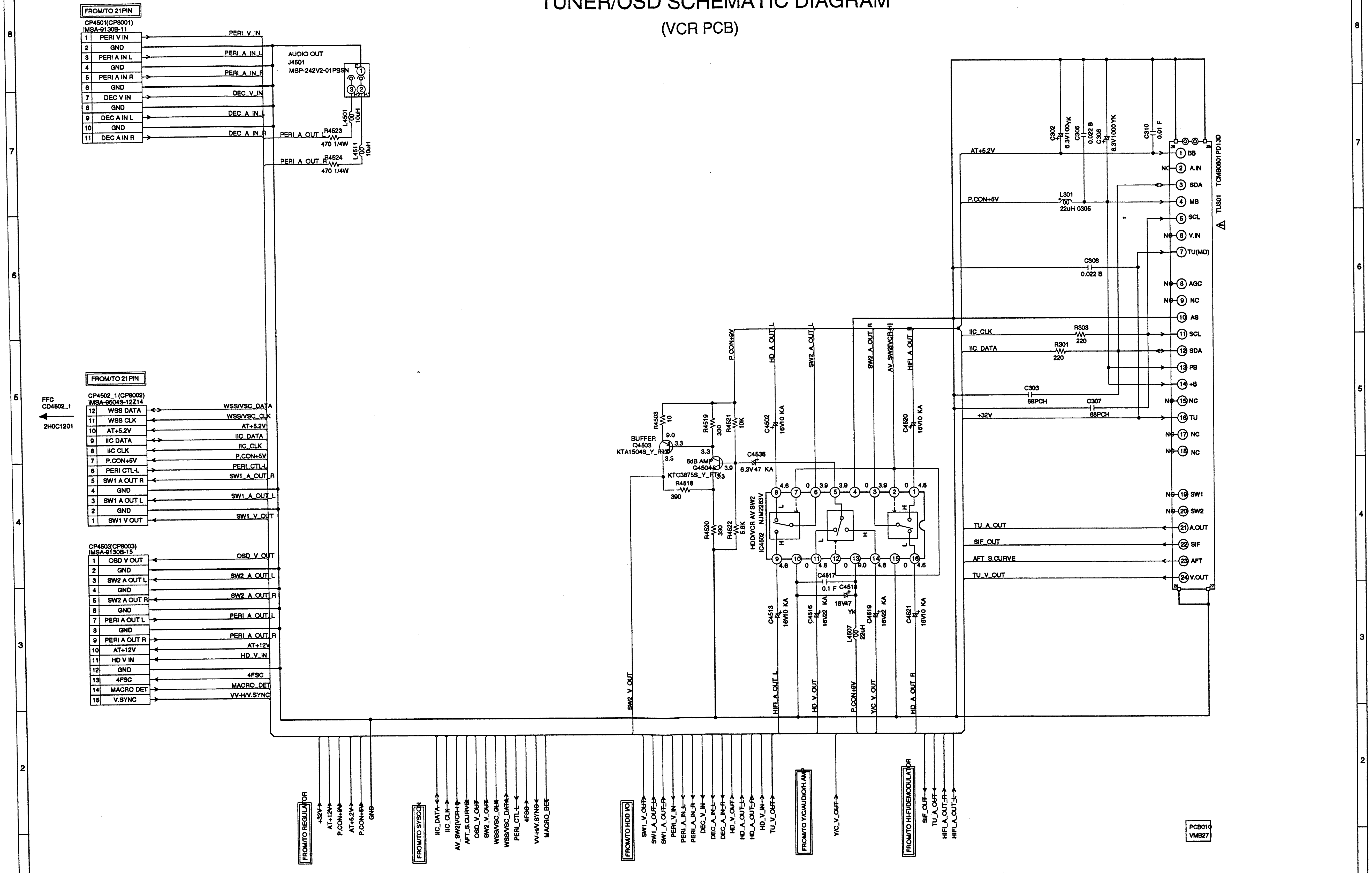
TUNER/OSD SCHEMATIC DIAGRAM

(VCR PCB)


FROM/TO 21PIN
CP4501(CP8001)
IMSA-9130B-11
1 PERI V IN
2 GND
3 PERI A IN L
4 GND
5 PERI A IN R
6 GND
7 DEC V IN
8 GND
9 DEC A IN L
10 GND
11 DEC A IN R
PERI_V_IN
PERI_A_IN_L
PERI_A_IN_R
DEC_V_IN
DEC_A_IN_L
DEC_A_IN_R
AUDIO OUT
J4501
MSP-242V2-01PBSN
L4501 10uH
L4511 10uH
R4523 470 1/4W
R4524 470 1/4W
PERI_A_OUT_L
PERI_A_OUT_R
FFC
CD4502_1
2H0C1201
FROM/TO 21PIN
CP4502_1(CP8002)
IMSA-9604S-12Z14
12 WSS DATA
11 WSS CLK
10 AT+5.2V
9 IIC DATA
8 IIC CLK
7 P.CON+5V
6 PERI CTL-L
5 SW1 A OUT R
4 GND
3 SW1 A OUT L
2 GND
1 SW1 V OUT
WSS/VSC_DATA
WSS/VSC_CLK
AT+5.2V
IIC_DATA
IIC_CLK
P.CON+5V
PERI_CTL-L
SW1_A_OUT_R
SW1_A_OUT_L
SW1_V_OUT
CP4503(CP8003)
IMSA-9130B-15
1 OSD V OUT
2 GND
3 SW2 A OUT L
4 GND
5 SW2 A OUT R
6 GND
7 PERI A OUT L
8 GND
9 PERI A OUT R
10 AT+12V
11 HD V IN
12 GND
13 4FSC
14 MACRO DET
15 V.SYNC
OSD_V_OUT
SW2_A_OUT_L
SW2_A_OUT_R
PERI_A_OUT_L
PERI_A_OUT_R
AT+12V
HD_V_IN
4FSC
MACRO_DET
VV-H/V.SYNC
P.CON+9V
HD_A_OUT_L
SW2_A_OUT_L
SW2_A_OUT_R
AV_SW2[VCR-H]
HIFI_A_OUT_R
R4503 10
BUFFER
Q4503
KTA1504S_Y_RTK
9.0
3.3
3.5
R4519 330
R4521 10K
C4502 16V10 KA
C4520 16V10 KA
3.3
6dB AMP
Q4504
KTC3875S_Y_RTK
3.9
3.3
C4536
6.3V47 KA
R4518 390
R4520 330
R4522 5.6K
HDD/VCR AV SW2
IC4502 NJM2283V
4.6 0 3.9 3.9 0 3.9 0 4.6
4.6 0 4.6 0 9.0 4.6 0 4.6
C4517 0.1 F
C4518 16V47 YK
C4513 16V10 KA
C4516 16V22 KA
L4507 22uH
C4519 16V22 KA
C4521 16V10 KA
SW2_V_OUT
HIFI_A_OUT_L
HD_V_OUT
P.CON+9V
Y/C_V_OUT
HD_A_OUT_R
C302 6.3V100YK
C305 0.022 B
C308 6.3V1000YK
C310 0.01 F
AT+5.2V
P.CON+5V
L301 22uH 0305
C306 0.022 B
IIC_CLK
IIC_DATA
R303 220
R301 220
C303 68PCH
C307 68PCH
+32V
TU_A_OUT
SIF_OUT
AFT_S.CURVE
TU_V_OUT
TU301 TCMB0601PD13D
1 BB
2 A.IN
3 SDA
4 MB
5 SCL
6 V.IN
7 TU(MD)
8 AGC
9 NC
10 AS
11 SCL
12 SDA
13 PB
14 +B
15 NC
16 TU
17 NC
18 NC
19 SW1
20 SW2
21 A.OUT
22 SIF
23 AFT
24 V.OUT
NC
FROM/TO REGULATOR
+32V
AT+12V
P.CON+9V
AT+5.2V
P.CON+5V
GND
FROM/TO SYSCON
IIC_DATA
IIC_CLK
AV_SW2[VCR-H]
AFT_S.CURVE
OSD_V_OUT
SW2_V_OUT
WSS/VSC_CLK
WSS/VSC_DATA
PERI_CTL-L
4FSC
VV-H/V.SYNC
MACRO_DET
FROM/TO HDD I/O
SW1_V_OUT
SW1_A_OUT_L
SW1_A_OUT_R
PERI_V_IN
PERI_A_IN_L
PERI_A_IN_R
DEC_V_IN
DEC_A_IN_L
DEC_A_IN_R
HD_V_OUT
HD_A_OUT_L
HD_A_OUT_R
HD_V_IN
TU_V_OUT
FROM/TO Y/C/AUDIO/H.AMP
Y/C_V_OUT
FROM/TO HI-FI/DEMODULATOR
SIF_OUT
TU_A_OUT
HIFI_A_OUT_R
HIFI_A_OUT_L
PCB010
VMB27
A B C D E F G H
1 2 3 4 5 6 7 8

ATTENTION:LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

CAUTION:SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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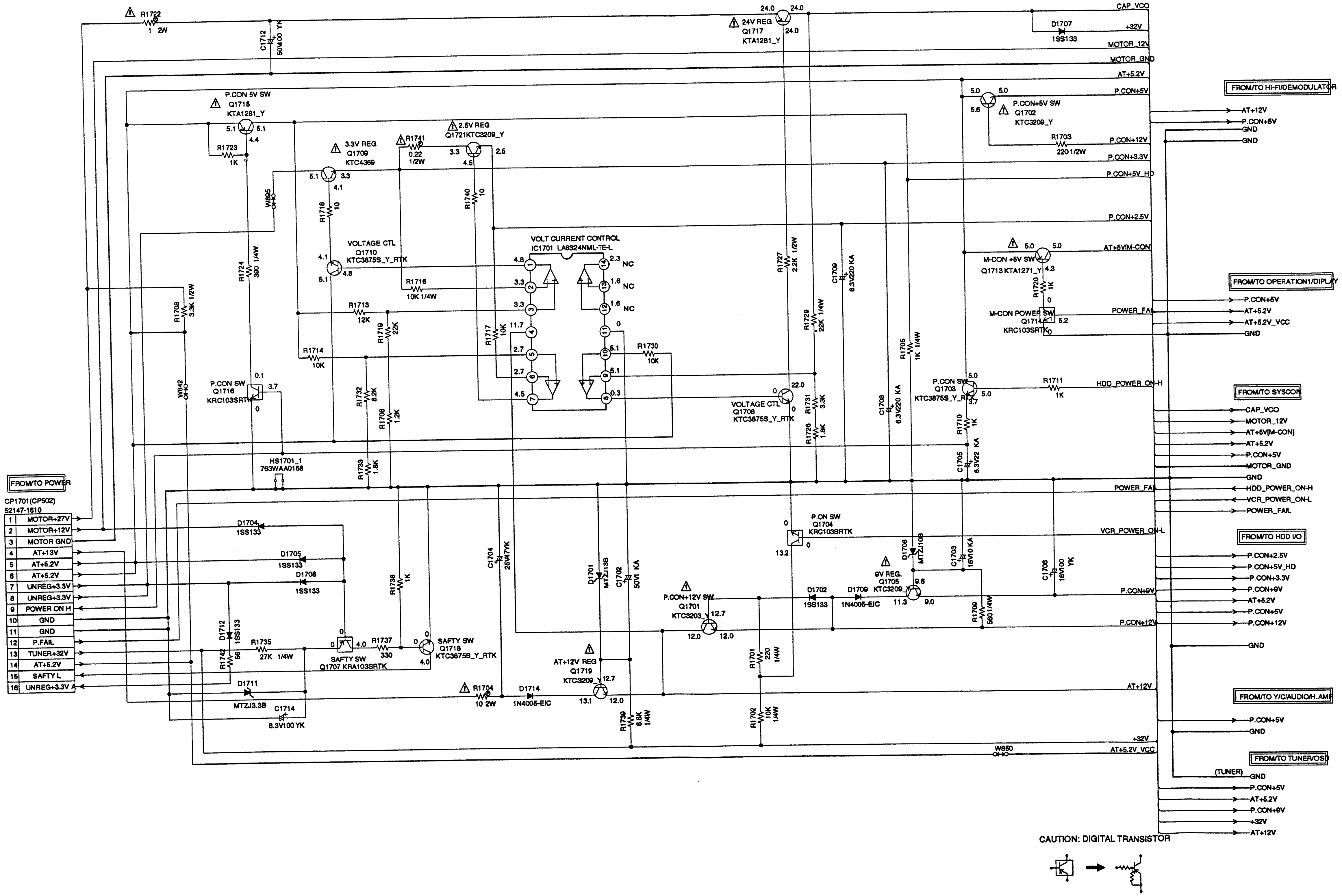
REGULATOR SCHEMATIC DIAGRAM

(VCR PCB)


R1722 1 2W
C1712 50V100 YK
24V REG Q1717 KTA1281_Y
D1707 1SS133
CAP_VCO
+32V
MOTOR_12V
MOTOR_GND
AT+5.2V
P.CON+5V
P.CON+12V
P.CON+3.3V
P.CON+5V_HD
P.CON+2.5V
AT+5VM-CON
POWER_FAIL
HDD_POWER_ON-H
VCR_POWER_ON-L
P.CON+9V
AT+12V
AT+5.2V_VCC
W850
P.CON 5V SW Q1715 KTA1281_Y
R1723 1K
3.3V REG Q1709 KTC4369
R1741 0.22 1/2W
2.5V REG Q1721KTC3209_Y
W805
R1718 10
R1740 10
VOLTAGE CTL Q1710 KTC3875S_Y_RTK
VOLT CURRENT CONTROL IC1701 LA6324NML-TE-L
NC
R1716 10K 1/4W
R1713 12K
R1719 22K
R1717 10K
R1714 10K
R1730 10K
R1724 390 1/4W
R1708 3.3K 1/2W
W842
P.CON SW Q1716 KRC103SRTK
R1732 8.2K
R1706 12K
R1733 1.8K
HS1701_1 763WAA0168
R1727 2.2K 1/2W
C1709 6.3V220 KA
R1729 22K 1/4W
VOLTAGE CTL Q1708 KTC3875S_Y_RTK
R1731 3.3K
R1726 1.8K
R1705 1K 1/4W
C1708 6.3V220 KA
P.CON SW Q1703 KTC3875S_Y_RTK
R1710 1K
C1705 6.3V22 KA
R1711 1K
P.CON+5V SW Q1702 KTC3209_Y
R1703 220 1/2W
M-CON +5V SW Q1713 KTA1271_Y
R1720 1K
M-CON POWER SW Q1714 KRC103SRTK
FROM/TO POWER
CP1701(CP502) 52147-1610
1 MOTOR+27V
2 MOTOR+12V
3 MOTOR GND
4 AT+13V
5 AT+5.2V
6 AT+5.2V
7 UNREG+3.3V
8 UNREG+3.3V
9 POWER ON H
10 GND
11 GND
12 P.FAIL
13 TUNER+32V
14 AT+5.2V
15 SAFTY L
16 UNREG+3.3V
D1704 1SS133
D1705 1SS133
D1708 1SS133
D1712 1SS133
R1742 56
R1735 27K 1/4W
SAFTY SW Q1707 KRA103SRTK
R1737 330
SAFTY SW Q1718 KTC3875S_Y_RTK
R1738 1K
D1711 MTZJ3.3B
C1714 6.3V100 YK
R1704 10 2W
D1714 1N4005-EIC
C1704 25V47YK
D1701 MTZJ13B
C1702 50V1 KA
AT+12V REG Q1719 KTC3209
R1739 6.8K 1/4W
P.CON+12V SW Q1701 KTC3203
R1701 220 1/4W
R1702 10K 1/4W
P.ON SW Q1704 KRC103SRTK
D1702 1SS133
D1709 1N4005-EIC
9V REG. Q1705 KTC3209
D1706 MTZJ10B
C1703 16V10 KA
R1709 560 1/4W
C1706 16V100 YK
FROM/TO HI-FI/DEMODULATOR
AT+12V
P.CON+5V
GND
FROM/TO OPERATION1/DIPLAY
P.CON+5V
AT+5.2V
AT+5.2V_VCC
FROM/TO SYSCON
CAP_VCO
MOTOR_12V
AT+5V(M-CON)
AT+5.2V
P.CON+5V
MOTOR_GND
GND
HDD_POWER_ON-H
VCR_POWER_ON-L
POWER_FAIL
FROM/TO HDD I/O
P.CON+2.5V
P.CON+5V_HD
P.CON+3.3V
P.CON+9V
AT+5.2V
P.CON+5V
P.CON+12V
GND
FROM/TO Y/C/AUDIO/H.AMP
P.CON+5V
GND
FROM/TO TUNER/OSD
(TUNER)
GND
P.CON+5V
AT+5.2V
P.CON+9V
+32V
AT+12V
CAUTION: DIGITAL TRANSISTOR

PCB010
VMB271

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

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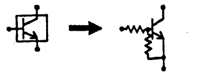
ATTENTION:LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE NUTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

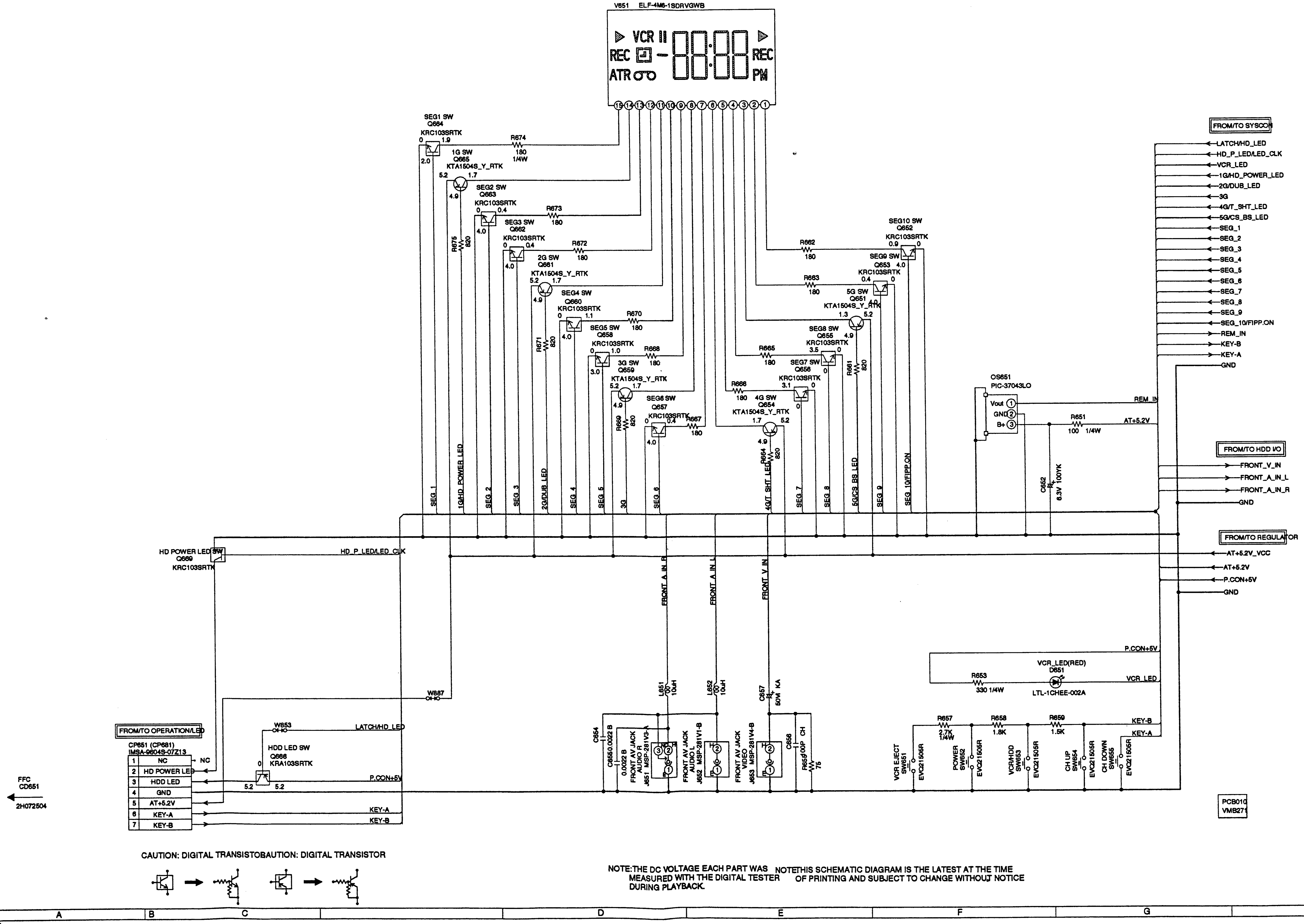
CAUTION:SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

CAUTION: DIGITAL TRANSISTOR



OPERATION/DISPLAY SCHEMATIC DIAGRAM

(VCR PCB)


V651 ELF-4M6-1SDRVGWB
VCR
REC
ATR
PM
SEG1 SW
Q664
KRC103SRTK
R674
180
1/4W
1G SW
Q665
KTA1504S_Y_RTK
SEG2 SW
Q663
KRC103SRTK
R673
180
SEG3 SW
Q662
KRC103SRTK
R672
180
2G SW
Q661
KTA1504S_Y_RTK
SEG4 SW
Q660
KRC103SRTK
R670
180
SEG5 SW
Q658
KRC103SRTK
R668
180
3G SW
Q659
KTA1504S_Y_RTK
SEG6 SW
Q657
KRC103SRTK
R667
180
R675
820
R671
820
R669
820
SEG10 SW
Q652
KRC103SRTK
SEG9 SW
Q653
KRC103SRTK
R662
180
R663
180
5G SW
Q651
KTA1504S_Y_RTK
SEG8 SW
Q655
KRC103SRTK
R665
180
SEG7 SW
Q656
KRC103SRTK
R666
180
4G SW
Q654
KTA1504S_Y_RTK
R661
820
R664
820
SEG_1
1G/HD_POWER_LED
SEG_2
SEG_3
2G/DUB_LED
SEG_4
SEG_5
3G
SEG_6
4G/T_SHT_LED
SEG_7
SEG_8
5G/CS_BS_LED
SEG_9
SEG_10/FIPP.ON
FROM/TO SYSCON
LATCH/HD_LED
HD_P_LED/LED_CLK
VCR_LED
1G/HD_POWER_LED
2G/DUB_LED
3G
4G/T_SHT_LED
5G/CS_BS_LED
SEG_1
SEG_2
SEG_3
SEG_4
SEG_5
SEG_6
SEG_7
SEG_8
SEG_9
SEG_10/FIPP.ON
REM_IN
KEY-B
KEY-A
GND
OS651
PIC-37043LO
Vout ①
GND ②
B+ ③
REM_IN
R651
100 1/4W
AT+5.2V
C652
6.3V 100YK
FROM/TO HDD I/O
FRONT_V_IN
FRONT_A_IN_L
FRONT_A_IN_R
GND
FROM/TO REGULATOR
AT+5.2V_VCC
AT+5.2V
P.CON+5V
GND
HD POWER LED SW
Q669
KRC103SRTK
HD_P_LED/LED_CLK
FRONT_A_IN_R
FRONT_A_IN_L
FRONT_V_IN
W887
L651
10uH
L652
10uH
C657
50V KA
C654
C655 0.022 B
FRONT AV JACK AUDIO R
J651 MSP-281V3-A
FRONT AV JACK AUDIO L
J652 MSP-281V1-B
FRONT AV JACK VIDEO
J653 MSP-281V4-B
C656
100P CH
R659
75
P.CON+5V
VCR_LED(RED)
D651
LTL-1CHEE-002A
R653
330 1/4W
VCR_LED
R657
2.7K 1/4W
R658
1.8K
R659
1.5K
KEY-B
KEY-A
VCR EJECT SW651 EVQ21505R
POWER SW652 EVQ21505R
VCR/HDD SW653 EVQ21505R
CH UP SW654 EVQ21505R
CH DOWN SW655 EVQ21505R
PCB010
VMB271
FROM/TO OPERATION/LED
CP651 (CP681)
IMSA-9604S-07Z13
1 NC
2 HD POWER LED
3 HDD LED
4 GND
5 AT+5.2V
6 KEY-A
7 KEY-B
NC
W853
LATCH/HD_LED
HDD LED SW
Q666
KRA103SRTK
P.CON+5V
KEY-A
KEY-B
FFC
CD651
2H072504
CAUTION: DIGITAL TRANSISTOBAUTION: DIGITAL TRANSISTOR

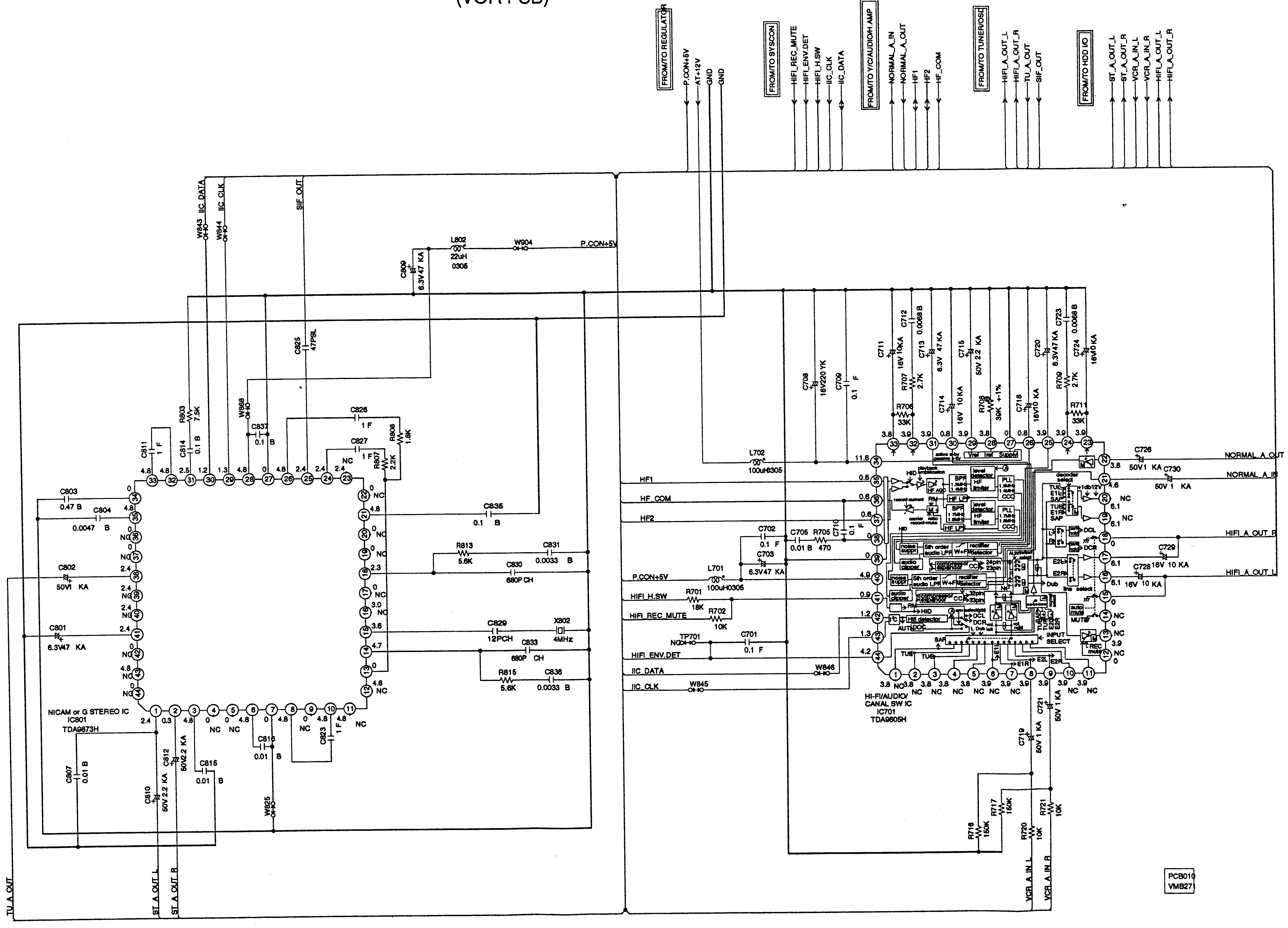
NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

Hi-Fi/DEMODULATOR SCHEMATIC DIAGRAM

(VCR PCB)

	G STEREO	NICAM	
PIN	TDA9873H	TDA9874H	TDA9874AH
1	OUTL	OUTL	OUTL
2	OUTR	OUTR	OUTR
3	CDE1	VDDA1	VDDA1
4	NC	VSSA1	VSSA1
5	NC	VSSD1	VSSD1
6	CDE2	VDDD1	VDDD1
7	AGND	VSSD2	VSSD2
8	AF1I	VDDD2	NC
9	NC	TP2	TP2
10	AF1O	NICAM	NICAM
11	NC	TP1	TP1
12	NC	PCLK	PCLK
13	AFR	ADDR1	ADDR1
14	LF1	VTUNE	XTALO
15	XTAL	XTALI	XTALI
16	NC	XTALO	TP3
17	NC	TEST2	TEST2
18	LF2	IREF	IREF
19	NC	ADDR2	ADDR2
20	NC	VSSA2	VSSA2
21	MAD	VDDA2	VDEC
22	NC	TEST1	TEST1
23	NC	SIF2	SIF2
24	CAF1	VREF1	VREF1
25	IFINT	SIF1	SIF1
26	CAF2	CRESET	CRESET
27	DGND	VSSD3	VSSA3
28	VCC	VDDD3	VDDA3
29	SCL	SCL	SCL
30	SDA	SDA	SDA
31	LPF	SDO	SDO
32	AF20	WS	WS
33	AF21	SCK	SCK
34	CTRIG	SYSCLK	SYSCLK
35	CID	VDDD4	VDDD3
36	NC	VSSD4	VSSD3
37	P1	P1	P1
38	EXTM	MONOIN	MONOIN
39	EXTR	EXTIR	EXTIR
40	EXTL	EXTIL	EXTIL
41	VREF	VREF2	VREF2
42	P2	P2	P2
43	OUTM	VDDA3	OUTM
44	NC	VSSA3	VSSA4

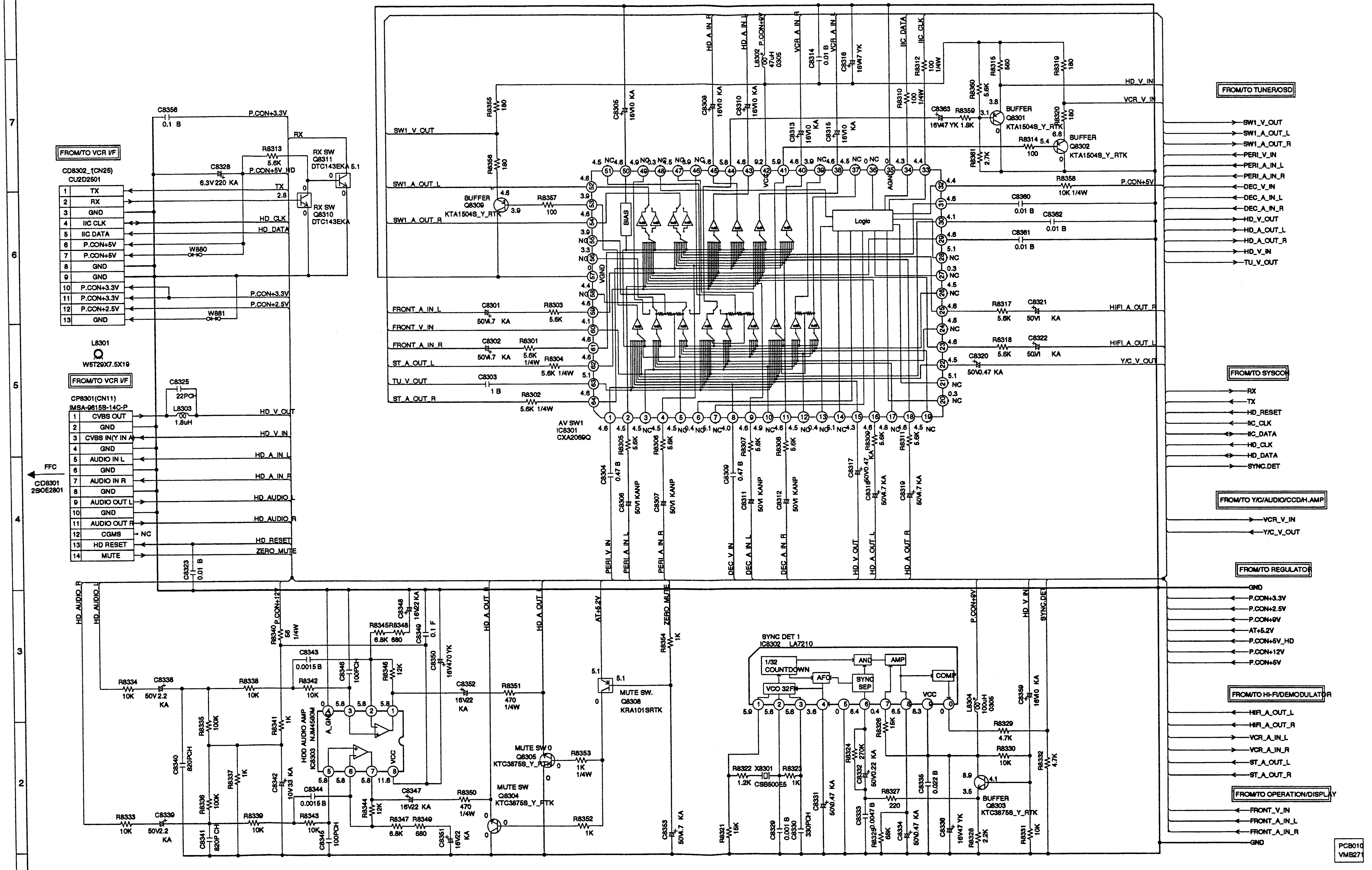

FROM/TO REGULATOR
P.CON+5V
AT+12V
GND
GND
FROM/TO SYSCON
HIFI_REC_MUTE
HIFI_ENV.DET
HIFI_H.SW
IIC_CLK
IIC_DATA
FROM/TO Y/C/AUDIO/H.AMP
NORMAL_A_IN
NORMAL_A_OUT
HF1
HF2
HF_COM
FROM/TO TUNER/OSD
HIFI_A_OUT_L
HIFI_A_OUT_R
TU_A_OUT
SIF_OUT
FROM/TO HDD I/O
ST_A_OUT_L
ST_A_OUT_R
VCR_A_IN_L
VCR_A_IN_R
HIFI_A_OUT_L
HIFI_A_OUT_R
IIC_DATA
IIC_CLK
SIF_OUT
W843
W844
L802
22uH
0305
W904
P.CON+5V
C809
6.3V47 KA
C825
47PSL
R803
7.5K
W868
C837
0.1 B
C826
1 F
C827
R808
1.8K
R807
2.2K
C811
1 F
C814
0.1 B
C803
0.47 B
C804
0.0047 B
C802
50V1 KA
C801
6.3V47 KA
C835
0.1 B
R813
5.6K
C830
680P CH
C831
0.0033 B
C829
12PCH
X802
4MHz
C833
680P CH
R815
5.6K
C836
0.0033 B
NICAM or G STEREO IC
IC801
TDA9873H
C807
0.01 B
C810
50V 2.2 KA
C812
50V2.2 KA
C815
0.01 B
C816
0.01 B
C823
1 F
W825
TU_A_OUT
ST_A_OUT_L
ST_A_OUT_R
L702
100uH0305
C708
16V220 YK
C709
0.1 F
HF1
HF_COM
HF2
C702
0.1 F
C705
0.01 B
R705
470
C710
0.1 F
C703
6.3V47 KA
L701
100uH0305
P.CON+5V
HIFI_H.SW
R701
18K
HIFI_REC_MUTE
R702
10K
TP701
NC
C701
0.1 F
HIFI_ENV.DET
IIC_DATA
W846
IIC_CLK
W845
C711
16V 10KA
C712
0.0068 B
C713
6.3V 47 KA
C714
16V 10 KA
C715
50V 2.2 KA
C718
16V10 KA
C720
6.3V47 KA
C723
0.0068 B
C724
16V10 KA
R706
33K
R707
2.7K
R708
39K +-1%
R709
2.7K
R711
33K
C726
50V1 KA
C730
50V 1 KA
NORMAL_A_OUT
NORMAL_A_IN
C729
C728
16V 10 KA
HIFI_A_OUT_R
HIFI_A_OUT_L
HI-FI/AUDIO/
CANAL SW IC
IC701
TDA9605H
C719
50V 1 KA
C721
50V 1 KA
R716
150K
R717
150K
R720
10K
R721
10K
VCR_A_IN_L
VCR_A_IN_R
PCB010
VMB27

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

HDD IN/OUT SCHEMATIC DIAGRAM

(VCR PCB)



FROM/TO VCR I/F
CD8302_(CN25)
CU2D2501
1 TX
2 RX
3 GND
4 IIC CLK
5 IIC DATA
6 P.CON+5V
7 P.CON+5V
8 GND
9 GND
10 P.CON+3.3V
11 P.CON+3.3V
12 P.CON+2.5V
13 GND
W880
W881
L8301
W5T29X7.5X19
FROM/TO VCR I/F
CP8301(CN11)
IMSA-9615S-14C-P
1 CVBS OUT
2 GND
3 CVBS IN(Y IN A)
4 GND
5 AUDIO IN L
6 GND
7 AUDIO IN R
8 GND
9 AUDIO OUT L
10 GND
11 AUDIO OUT R
12 CGMS
13 HD RESET
14 MUTE
NC
FFC
CD8301
2SOE2801
C8356 0.1 B
P.CON+3.3V
RX
R8313 5.6K
C8328 6.3V220 KA
P.CON+5V_HD
RX SW Q8311 DTC143EKA
RX SW Q8310 DTC143EKA
TX
HD_CLK
HD_DATA
P.CON+3.3V
P.CON+2.5V
C8325 22PCH
L8303 1.8uH
HD_V_OUT
HD_V_IN
HD_A_IN_L
HD_A_IN_R
HD_AUDIO_L
HD_AUDIO_R
HD_RESET
ZERO_MUTE
C8323 0.01 B
SW1_V_OUT
SW1_A_OUT_L
SW1_A_OUT_R
BUFFER Q8309 KTA1504S_Y_RTK
R8357 100
R8355 180
R8356 180
FRONT_A_IN_L
FRONT_V_IN
FRONT_A_IN_R
ST_A_OUT_L
TU_V_OUT
ST_A_OUT_R
C8301 50V4.7 KA
C8302 50V4.7 KA
C8303 1 B
R8303 5.6K
R8301 5.6K 1/4W
R8304 5.6K 1/4W
R8302 5.6K 1/4W
AV SW1
IC8301
CXA2069Q
BIAS
Logic
VGND
AGND
VCC
HD_A_IN_R
HD_A_IN_L
L8302 47uH
P.CON+9V
VCR_A_IN_R
VCR_A_IN_L
C8314 0.01 B
C8316 16V47 YK
IIC DATA
IIC CLK
R8312 100 1/4W
R8310 100 1/4W
C8305 16V10 KA
C8308 16V10 KA
C8310 16V10 KA
C8313 16V10 KA
C8315 16V10 KA
C8363 16V47 YK
R8359 1.8K
R8360 5.6K
R8315 560
R8319 180
R8320 180
R8361 2.7K
R8314 100
BUFFER Q8301 KTA1504S_Y_RTK
BUFFER Q8302 KTA1504S_Y_RTK
R8358 10K 1/4W
HD_V_IN
VCR_V_IN
P.CON+5V
C8360 0.01 B
C8362 0.01 B
C8361 0.01 B
R8317 5.6K
C8321 50V1 KA
R8318 5.6K
C8322 50V1 KA
C8320 50V0.47 KA
HIFI_A_OUT_R
HIFI_A_OUT_L
Y/C_V_OUT
C8304 0.47 B
R8305 5.6K
R8306 5.6K
C8306 50V1 KANP
C8307 50V1 KANP
C8309 0.47 B
R8307 5.6K
R8308 5.6K
C8311 50V1 KANP
C8312 50V1 KANP
C8317 50V0.47 KA
R8309 5.6K
R8311 5.6K
C8318 50V4.7 KA
C8319 50V4.7 KA
PERI_V_IN
PERI_A_IN_L
PERI_A_IN_R
DEC_V_IN
DEC_A_IN_L
DEC_A_IN_R
HD_V_OUT
HD_A_OUT_L
HD_A_OUT_R
FROM/TO TUNER/OSD
SW1_V_OUT
SW1_A_OUT_L
SW1_A_OUT_R
PERI_V_IN
PERI_A_IN_L
PERI_A_IN_R
DEC_V_IN
DEC_A_IN_L
DEC_A_IN_R
HD_V_OUT
HD_A_OUT_L
HD_A_OUT_R
HD_V_IN
TU_V_OUT
FROM/TO SYSCON
RX
TX
HD_RESET
IIC_CLK
IIC_DATA
HD_CLK
HD_DATA
SYNC.DET
FROM/TO Y/C/AUDIO/CCD/H.AMP
VCR_V_IN
Y/C_V_OUT
FROM/TO REGULATOR
GND
P.CON+3.3V
P.CON+2.5V
P.CON+9V
AT+5.2V
P.CON+5V_HD
P.CON+12V
P.CON+5V
FROM/TO HI-FI/DEMODULATOR
HIFI_A_OUT_L
HIFI_A_OUT_R
VCR_A_IN_L
VCR_A_IN_R
ST_A_OUT_L
ST_A_OUT_R
FROM/TO OPERATION/DISPLAY
FRONT_V_IN
FRONT_A_IN_L
FRONT_A_IN_R
GND
HD_AUDIO_R
HD_AUDIO_L
P.CON+12V
R8340 56 1/4W
C8343 0.0015 B
C8348 16V22 KA
R8345 6.8K
R8348 680
C8349 0.1 F
C8350 16V470 YK
C8346 100PCH
R8346 12K
R8334 10K
C8338 50V2.2 KA
R8338 10K
R8342 10K
R8335 100K
R8341 1K
HDD AUDIO AMP
IC8303 NJM4560M
C8340 820PCH
R8337 1K
R8336 100K
C8342 10V33 KA
C8344 0.0015 B
C8347 16V22 KA
R8344 12K
R8347 6.8K
R8349 680
R8333 10K
C8339 50V2.2 KA
R8339 10K
R8343 10K
C8341 820PCH
C8345 100PCH
C8351 16V22 KA
C8352 16V22 KA
R8351 470 1/4W
R8350 470 1/4W
HD_A_OUT_R
HD_A_OUT_L
MUTE SW Q8305 KTC3875S_Y_RTK
MUTE SW Q8304 KTC3875S_Y_RTK
R8353 1K 1/4W
R8352 1K
AT+5.2V
MUTE SW. Q8306 KRA101SRTK
ZERO_MUTE
R8354 1K
C8353 50V4.7 KA
SYNC DET 1
IC8302 LA7210
1/32 COUNTDOWN
AFC
ANC
AMP
SYNC SEP
COMP
VCO 32FH
VCC
R8322 1.2K
X8301 CSB500E5
R8323 1K
R8321 15K
C8329 0.001 B
C8330 330PCH
C8331 50V0.47 KA
C8332 50V0.22 KA
R8324 270K
R8326 15K
R8327 220
C8333 0.0047 B
R8325 68K
C8334 50V0.47 KA
C8335 0.022 B
C8336 16V47 YK
R8328 2.2K
R8331 10K
P.CON+9V
HD_V_IN
SYNC.DET
L8304 100uH
C8359 16V10 KA
R8329 4.7K
R8330 10K
R8332 4.7K
BUFFER Q8303 KTC3875S_Y_RTK
PCB010
VMB271

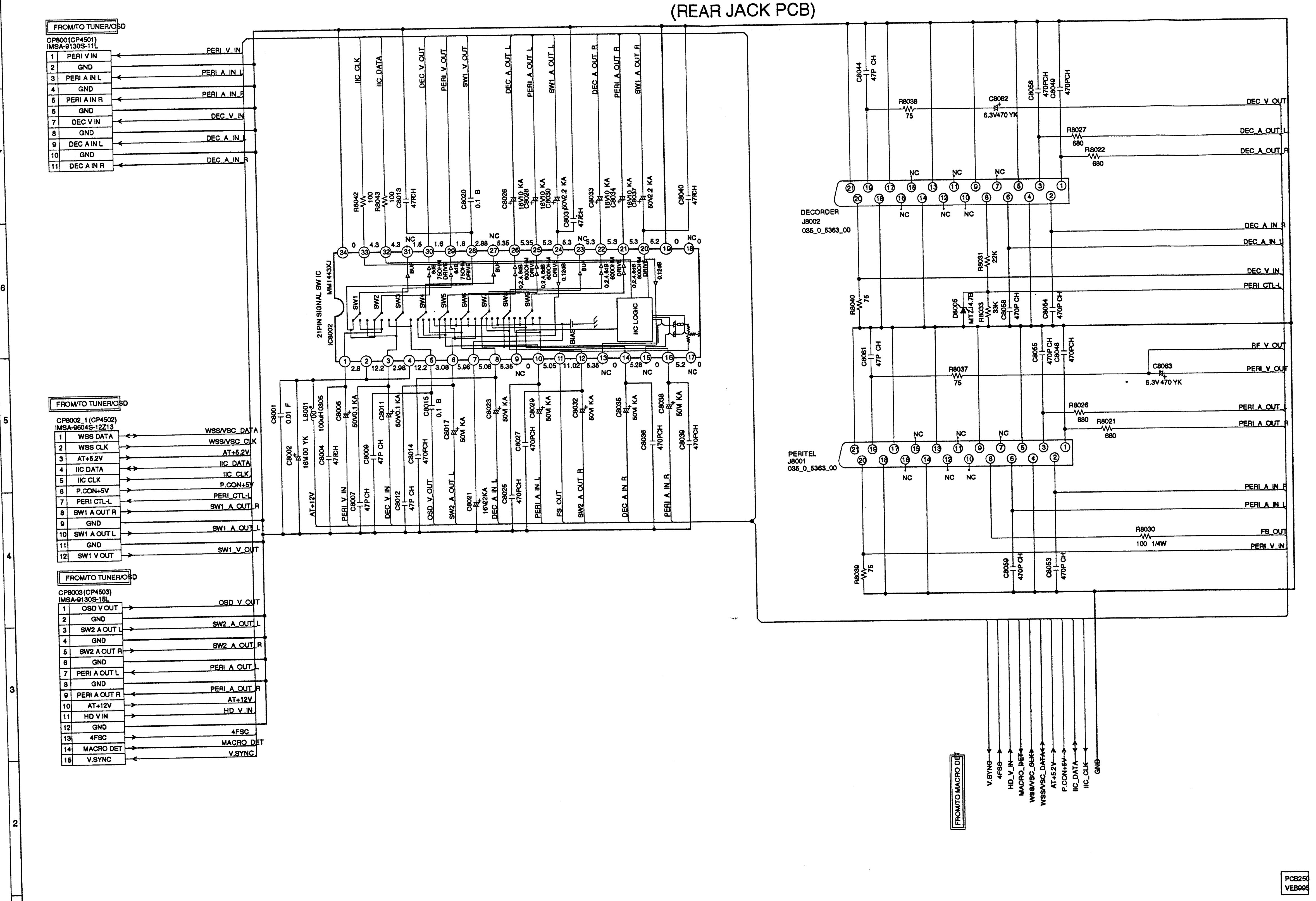
NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: DIGITAL TRANSISTOR CAUTION: DIGITAL TRANSISTOR

21PIN SCHEMATIC DIAGRAM

(REAR JACK PCB)


FROM/TO TUNER/OSD
CP8001(CP4501)
IMSA-9130S-11L
1 PERI V IN
2 GND
3 PERI A IN L
4 GND
5 PERI A IN R
6 GND
7 DEC V IN
8 GND
9 DEC A IN L
10 GND
11 DEC A IN R
FROM/TO TUNER/OSD
CP8002_1(CP4502)
IMSA-9604S-12Z13
1 WSS DATA
2 WSS CLK
3 AT+5.2V
4 IIC DATA
5 IIC CLK
6 P.CON+5V
7 PERI CTL-L
8 SW1 A OUT R
9 GND
10 SW1 A OUT L
11 GND
12 SW1 V OUT
FROM/TO TUNER/OSD
CP8003(CP4503)
IMSA-9130S-15L
1 OSD V OUT
2 GND
3 SW2 A OUT L
4 GND
5 SW2 A OUT R
6 GND
7 PERI A OUT L
8 GND
9 PERI A OUT R
10 AT+12V
11 HD V IN
12 GND
13 4FSC
14 MACRO DET
15 V.SYNC
IC8002
21PIN SIGNAL SW IC
MM1443XJ
IIC LOGIC
BIAS
DECORDER
J8002
035_0_5363_00
PERITEL
J8001
035_0_5363_00
FROM/TO MACRO DET
V.SYNC
4FSC
HD_V_IN
MACRO_DET
WSS/VSC_CLK
WSS/VSC_DATA
AT+5.2V
P.CON+5V
IIC_DATA
IIC_CLK
GND
PCB250
VEB995

ATTENTION:LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

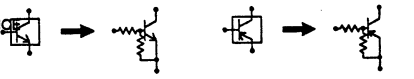
CAUTION:SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

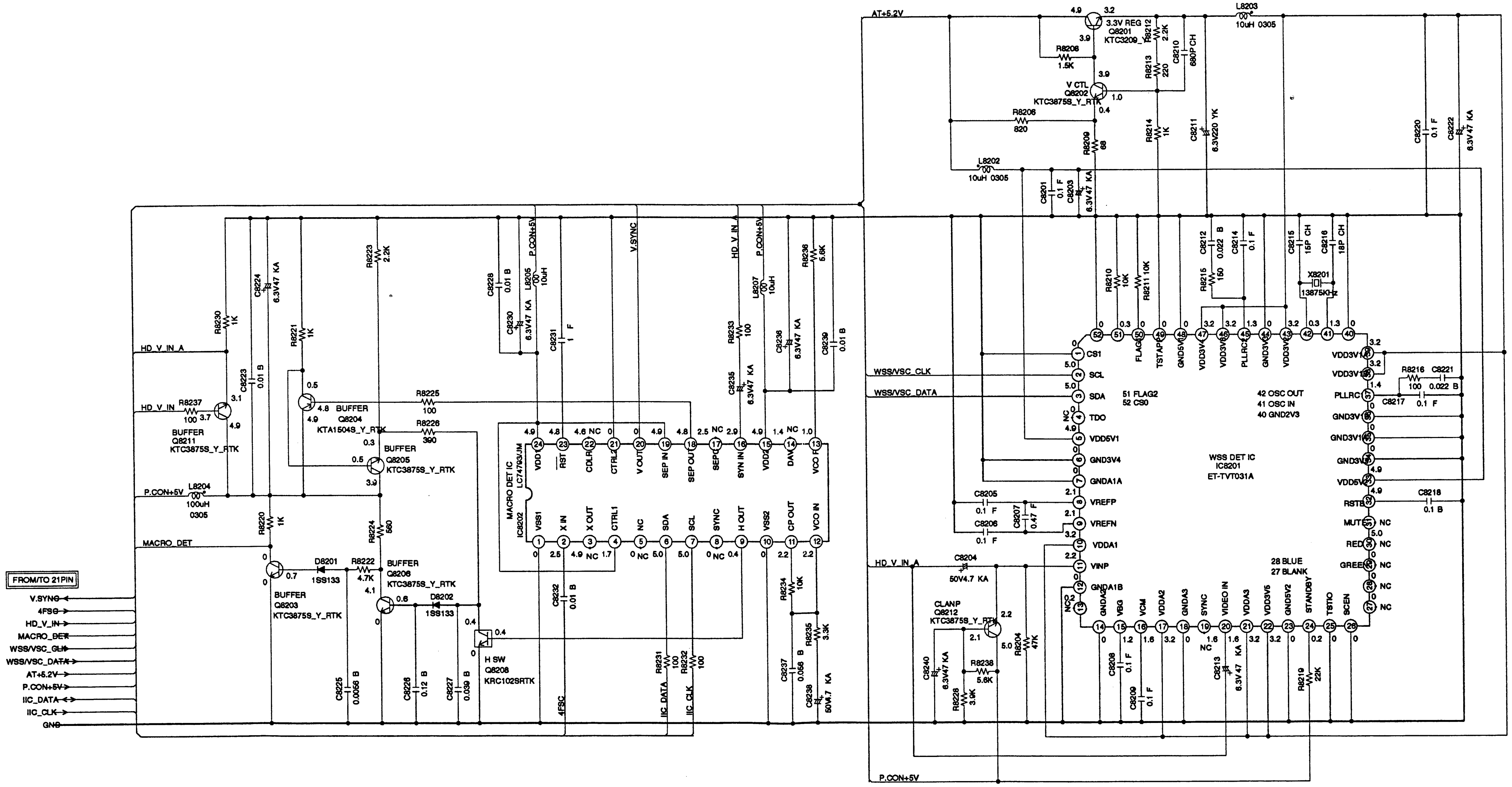
CAUTION: DIGITAL TRANSISTOR

CAUTION: DIGITAL TRANSISTOR



MACRO DET. SCHEMATIC DAIAGRAM

(REAR JACK PCB)


FROM/TO 21PIN
V.SYNC
4FSC
HD_V_IN
MACRO_DET
WSS/VSC_CLK
WSS/VSC_DATA
AT+5.2V
P.CON+5V
IIC_DATA
IIC_CLK
GND
HD_V_IN_A
BUFFER Q8211 KTC3875S_Y_RTK
BUFFER Q8204 KTA1504S_Y_RTK
BUFFER Q8205 KTC3875S_Y_RTK
BUFFER Q8206 KTC3875S_Y_RTK
BUFFER Q8203 KTC3875S_Y_RTK
H SW Q8208 KRC102SRTK
D8201 1SS133
D8202 1SS133
L8204 100uH 0305
MACRO DET IC IC8202 LC74763JM
VDD1
RST
CDLR
CTRL2
V OUT
SEP IN
SEP OUT
SEPC
SYN IN
VDD2
DAV
VCO R
VSS1
X IN
X OUT
CTRL1
NC
SDA
SCL
SYNC
H OUT
VSS2
CP OUT
VCO IN
3.3V REG Q8201 KTC3209_Y
V CTL Q8202 KTC3875S_Y_RTK
L8202 10uH 0305
L8203 10uH 0305
X8201 13875KHz
WSS DET IC IC8201 ET-TVT031A
CS1
SCL
SDA
TDO
VDD5V1
GND3V4
GNDA1A
VREFP
VREFN
VDDA1
VINP
GNDA1B
GNDA2
VBG
VCM
VDDA2
GNDA3
SYNC
VIDEO IN
VDDA3
VDD3V5
GND5V2
STANDBY
TSTIO
SCEN
FLAG2
TSTAP
GND5V3
VDD3V4
PLLRC
GND3V3
VDD3V3
VDD3V1
VDD3V2
PLLRC
GND3V1
GND3V2
GND3V4
VDD5V2
RSTS
MUTE
RED
GREEN
51 FLAG2
52 CS0
42 OSC OUT
41 OSC IN
40 GND2V3
28 BLUE
27 BLANK
CLANP Q8212 KTC3875S_Y_RTK

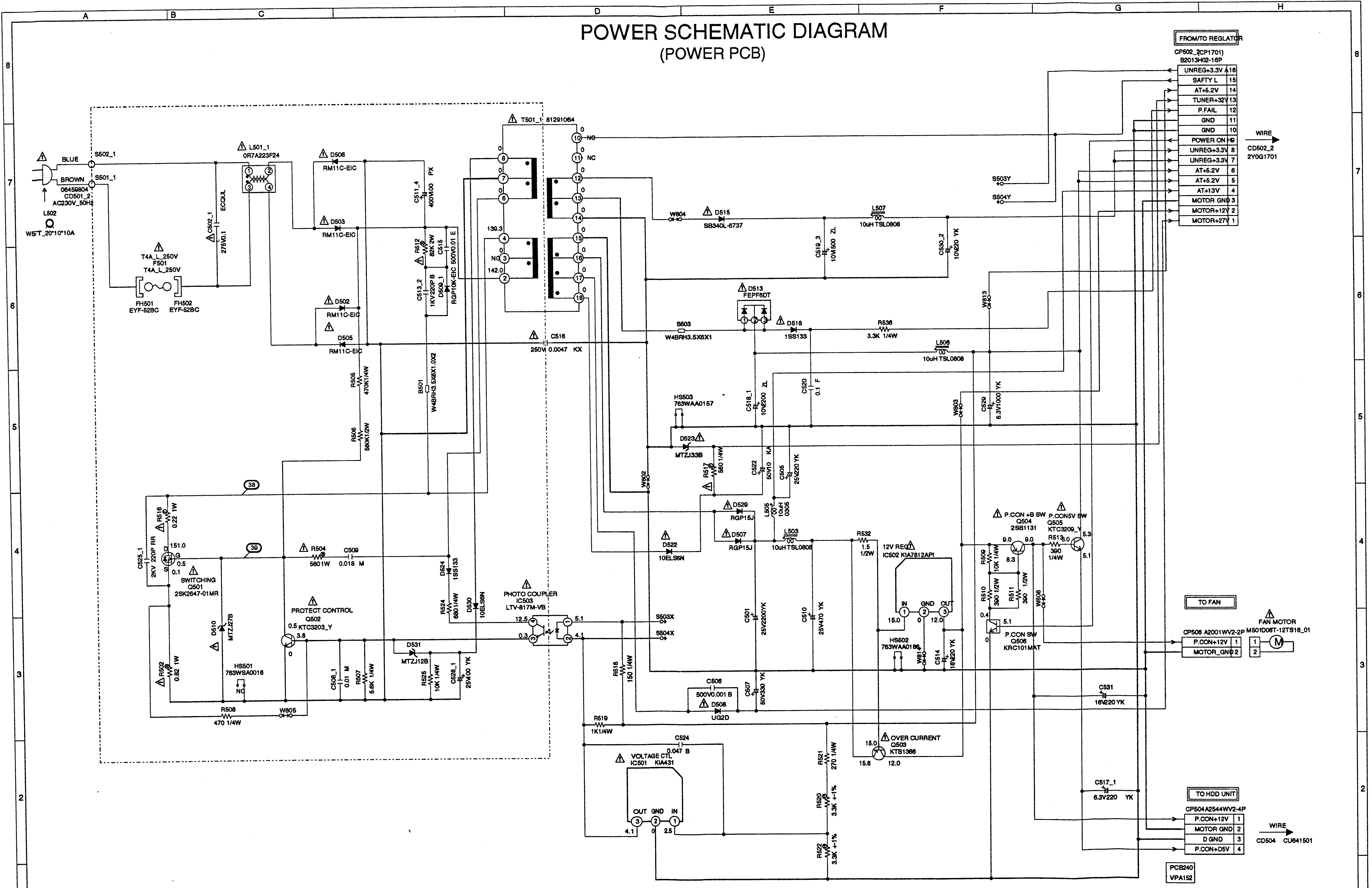
PCB250
VEB095

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

POWER SCHEMATIC DIAGRAM

(POWER PCB)


A
B
C
D
E
F
G
H
8
7
6
5
4
3
2
1
BLUE
BROWN
S502_1
S501_1
06459804
CD501_2
AC230V_50Hz
L502
W5T_20*10*10A
T4A_L_250V
F501
T4A_L_250V
FH501
EYF-52BC
FH502
EYF-52BC
C502_1
275V0.1
ECQUL
L501_1
0R7A223F24
D506
RM11C-EIC
D503
RM11C-EIC
D502
RM11C-EIC
D505
RM11C-EIC
C511_4
400V100 PX
R512
82K 2W
C515
500V0.01 E
C513_2
1KV220P B
D509_1
RGP10K-EIC
R505
470K1/4W
R506
560K1/2W
B501
W4BRH3.5X6X1.0X2
T501_1 81291064
139.3
142.0
NC
NC
NC
W804
D515
SB340L-6737
L507
10uH TSL0808
C519_3
10V1500 ZL
C530_2
10V220 YK
D513
FEPF8DT
B503
W4BRH3.5X6X1
D518
1SS133
R536
3.3K 1/4W
L506
10uH TSL0808
C516
250V 0.0047 KX
W813
HS503
763WAA0157
C518_1
10V2200 ZL
C520
0.1 F
W803
C529
6.3V1000 YK
D523
MTZJ33B
R517
560 1/4W
C522
50V10 KA
C505
25V220 YK
W802
D529
RGP15J
D507
RGP15J
D522
10ELS6N
L505
10uH 0305
L503
10uH TSL0808
R532
1.5 1/2W
12V REG
IC502 KIA7812API
IN
GND
OUT
15.0
0
12.0
HS502
763WAA0186
W811
C514
16V220 YK
C501
25V2200 YK
C510
25V470 YK
P.CON +B SW
Q504
2SB1131
P.CON5V SW
Q505
KTC3209_Y
9.0
9.0
8.3
5.0
5.3
5.1
R513
390 1/4W
R509
10K 1/4W
R510
390 1/2W
R511
390 1/2W
W806
P.CON SW
Q506
KRC101MAT
0.4
5.1
0
C531
16V220 YK
C517_1
6.3V220 YK
S503Y
S504Y
S503X
S504X
38
39
R516
0.22 1W
C525_1
2KV 220P RR
151.0
0.5
0.1
SWITCHING
Q501
2SK2647-01MR
R504
5601W
C509
0.018 M
D524
1SS133
R524
6801/4W
D530
10ELS6N
PHOTO COUPLER
IC503
LTV-817M-VB
12.5
0.3
5.1
4.1
D510
MTZJ27B
HS501
763WSA0016
NC
PROTECT CONTROL
Q502
KTC3203_Y
0.5
3.8
0
D531
MTZJ12B
C508_1
0.01 M
R507
5.6K 1/4W
R525
10K 1/4W
C528_1
25V100 YK
R502
0.82 1W
R508
470 1/4W
W805
R518
150 1/4W
C506
500V0.001 B
D508
UG2D
C507
50V330 YK
R519
1K1/4W
C524
0.047 B
VOLTAGE CTL
IC501 KIA431
OUT GND IN
4.1
0
2.5
R521
270 1/4W
R520
3.3K +1%
R522
3.3K +1%
OVER CURRENT
Q503
KTB1366
15.0
15.8
12.0
FROM/TO REGLATOR
CP502_2(CP1701)
B2013H02-16P
UNREG+3.3V A 16
SAFTY L 15
AT+5.2V 14
TUNER+32V 13
P.FAIL 12
GND 11
GND 10
POWER ON H 9
UNREG+3.3V 8
UNREG+3.3V 7
AT+5.2V 6
AT+5.2V 5
AT+13V 4
MOTOR GND 3
MOTOR+12V 2
MOTOR+27V 1
WIRE
CD502_2
2Y0G1701
TO FAN
FAN MOTOR
M501D06T-12TS16_01
CP506 A2001WV2-2P
P.CON+12V 1
MOTOR_GND 2
1
2
M
TO HDD UNIT
CP504A2544WV2-4P
P.CON+12V 1
MOTOR GND 2
D GND 3
P.CON+D5V 4
WIRE
CD504 CU641501
PCB240
VPA152

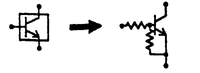
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY

ATTENTION: LES PIECES REPAREES PAR ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

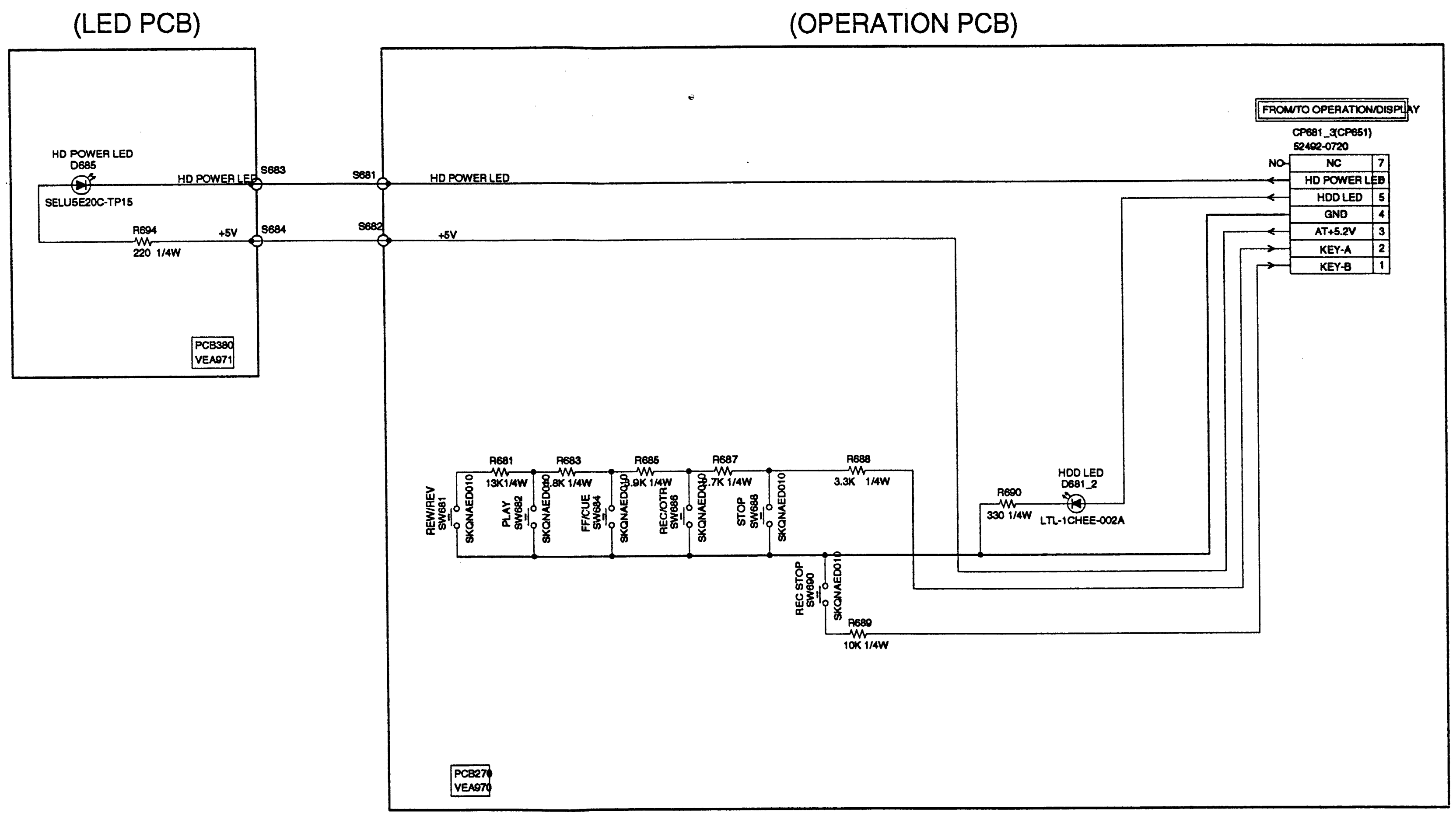
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

CAUTION: DIGITAL TRANSISTOR



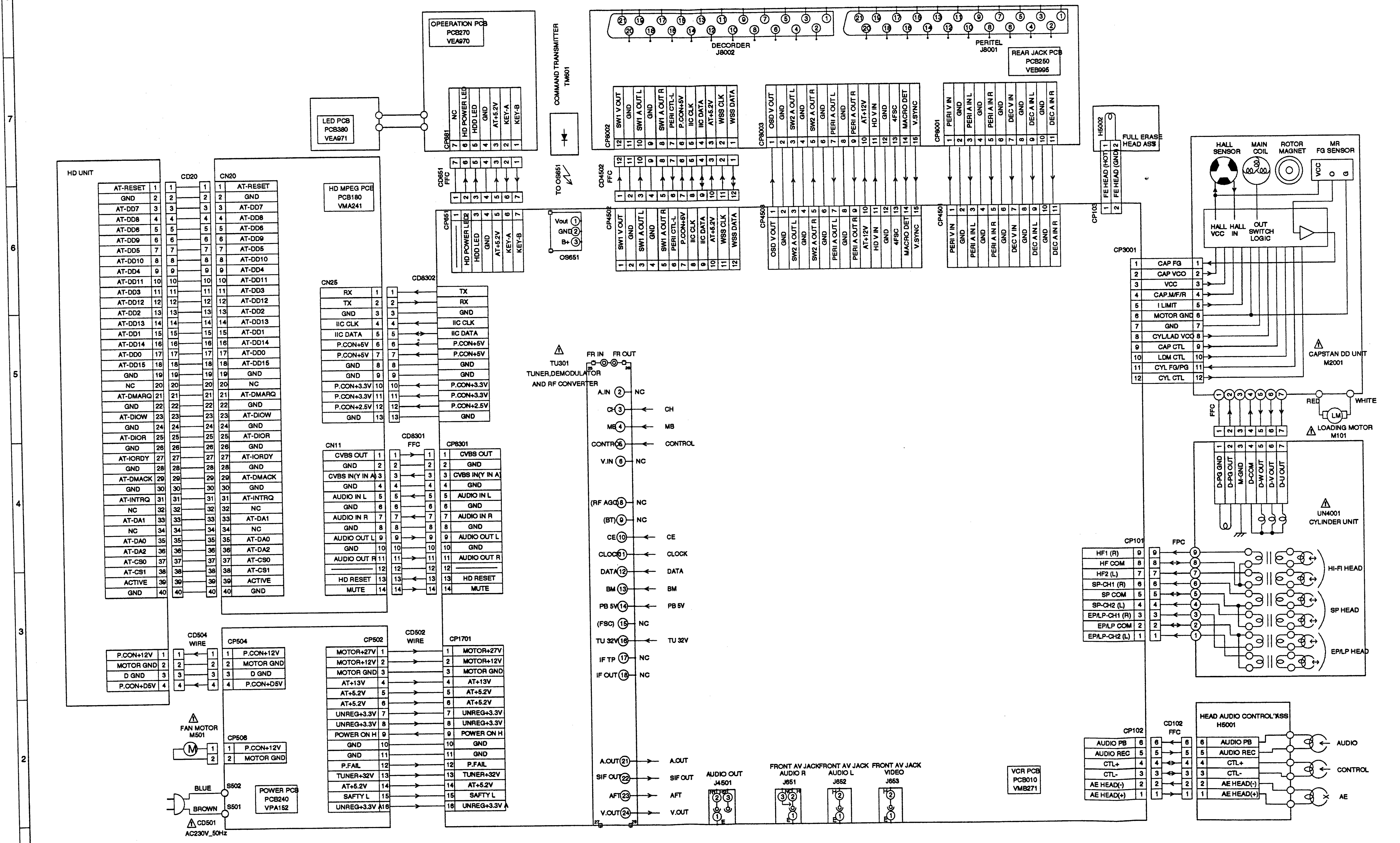
OPERATION/LED SCHEMATIC DIAGRAM


(LED PCB)
(OPERATION PCB)
HD POWER LED
D685
SELU5E20C-TP15
HD POWER LED
S683
R694
220 1/4W
+5V
S684
PCB380
VEA971
S681
HD POWER LED
S682
+5V
FROM/TO OPERATION/DISPLAY
CP681_3(CP651)
52492-0720
NO
NC 7
HD POWER LED 6
HDD LED 5
GND 4
AT+5.2V 3
KEY-A 2
KEY-B 1
R681
13K1/4W
R683
.8K 1/4W
R685
.9K 1/4W
R687
.7K 1/4W
R688
3.3K 1/4W
REW/REV
SW681
SKQNAED010
PLAY
SW682
SKQNAED010
FF/CUE
SW684
SKQNAED010
REC/OTR
SW686
SKQNAED010
STOP
SW688
SKQNAED010
REC STOP
SW690
SKQNAED010
R689
10K 1/4W
R690
330 1/4W
HDD LED
D681_2
LTL-1CHEE-002A
PCB270
VEA970

NOTE:THE DC VOLTAGE EACH PART WAS
MEASURED WITH THE DIGITAL TESTER
DURING PLAYBACK.

NOTETHIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

INTERCONNECTION DIAGRAM


OPEERATION PCB
PCB270
VEA970
LED PCB
PCB380
VEA971
COMMAND TRANSMITTER
TM601
TO OS651
OS651
Vout
GND
B+
CP681
CD651 FFC
CP651
NC
HD POWER LED
HDD LED
GND
AT+5.2V
KEY-A
KEY-B
DECORDER
J8002
PERITEL
J8001
REAR JACK PCB
PCB250
VEB995
CP8002
CD4502 FFC
CP4502
SW1 V OUT
SW1 A OUT L
SW1 A OUT R
PERI CTL-L
P.CON+5V
IIC CLK
IIC DATA
AT+5.2V
WSS CLK
WSS DATA
CP8003
CP4503
OSD V OUT
SW2 A OUT L
SW2 A OUT R
PERI A OUT L
PERI A OUT R
AT+12V
HD V IN
4FSC
MACRO DET
V.SYNC
CP8001
CP4501
PERI V IN
PERI A IN L
PERI A IN R
DEC V IN
DEC A IN L
DEC A IN R
H5002
FULL ERASE HEAD ASS
FE HEAD (HOT)
FE HEAD (GND)
CP103
HD UNIT
CD20
CN20
AT-RESET
GND
AT-DD0 … AT-DD15
AT-DMARQ
AT-DIOW
AT-DIOR
AT-IORDY
AT-DMACK
AT-INTRQ
AT-DA0
AT-DA1
AT-DA2
AT-CS0
AT-CS1
ACTIVE
NC
HD MPEG PCB
PCB180
VMA241
CN25
CD8302
RX
TX
IIC CLK
IIC DATA
P.CON+5V
P.CON+3.3V
P.CON+2.5V
CN11
CD8301 FFC
CP8301
CVBS OUT
CVBS IN(Y IN A)
AUDIO IN L
AUDIO IN R
AUDIO OUT L
AUDIO OUT R
HD RESET
MUTE
CD504 WIRE
CP504
P.CON+12V
MOTOR GND
D GND
P.CON+D5V
FAN MOTOR
M501
CP506
BLUE
BROWN
S502
S501
CD501
AC230V_50Hz
POWER PCB
PCB240
VPA152
CP502
CD502 WIRE
CP1701
MOTOR+27V
MOTOR+12V
AT+13V
AT+5.2V
UNREG+3.3V
POWER ON H
P.FAIL
TUNER+32V
SAFTY L
TU301
TUNER,DEMODULATOR AND RF CONVERTER
FR IN
FR OUT
A.IN
CH
MB
CONTROL
V.IN
(RF AGC)
(BT)
CE
CLOCK
DATA
BM
PB 5V
(FSC)
TU 32V
IF TP
IF OUT
A.OUT
SIF OUT
AFT
V.OUT
NC
AUDIO OUT
J4501
FRONT AV JACK AUDIO R
J651
FRONT AV JACK AUDIO L
J652
FRONT AV JACK VIDEO
J653
VCR PCB
PCB010
VMB271
HALL SENSOR
MAIN COIL
ROTOR MAGNET
MR FG SENSOR
VCC
HALL VCC
HALL IN
OUT SWITCH LOGIC
CP3001
CAP FG
CAP VCC
VCC
CAP.M/F/R
I LIMIT
MOTOR GND
GND
CYL/LAD VCC
CAP CTL
LDM CTL
CYL FG/PG
CYL CTL
CAPSTAN DD UNIT
M2001
RED
WHITE
LM
LOADING MOTOR
M101
FFC
D-PG GND
D-PG OUT
M-GND
D-COM
D-W OUT
D-V OUT
D-U OUT
UN4001
CYLINDER UNIT
CP101
FPC
HF1 (R)
HF COM
HF2 (L)
SP-CH1 (R)
SP COM
SP-CH2 (L)
EP/LP-CH1 (R)
EP/LP COM
EP/LP-CH2 (L)
HI-FI HEAD
SP HEAD
EP/LP HEAD
CP102
CD102 FFC
HEAD AUDIO CONTROL ASS
H5001
AUDIO PB
AUDIO REC
CTL+
CTL-
AE HEAD(-)
AE HEAD(+)
AUDIO
CONTROL
AE

CAUTION:SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY

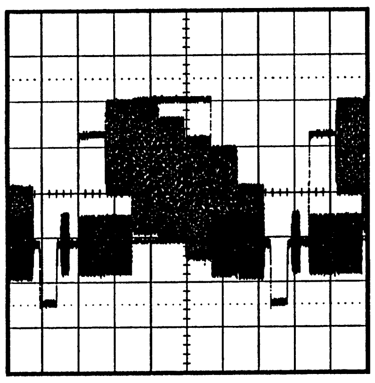
ATTENTION:LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N-UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES

NOTE:THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

WAVEFORMS

Y/C/AUDIO/HEAD AMP

①



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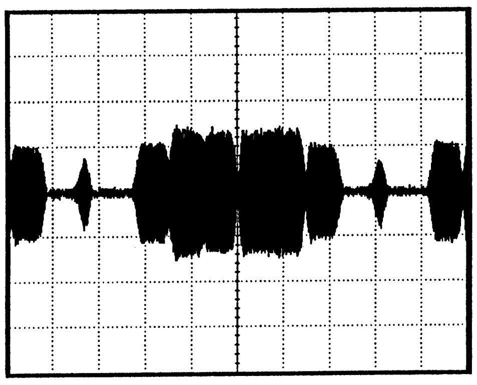
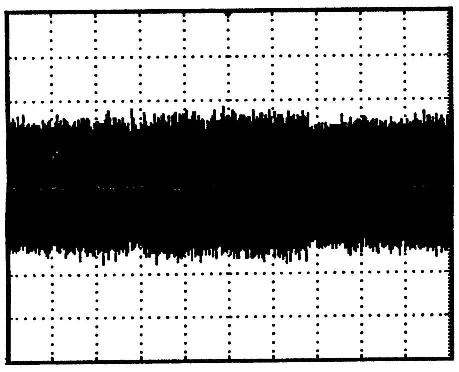


④



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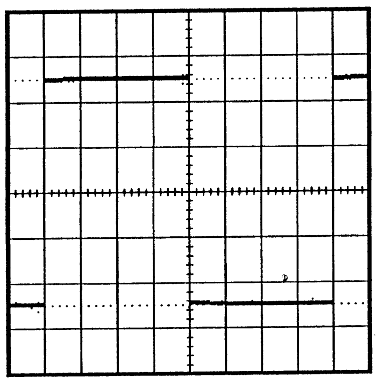
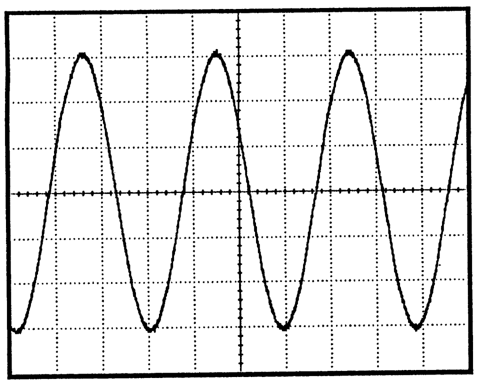
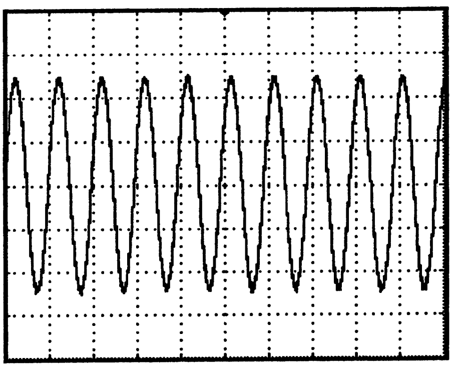


⑥

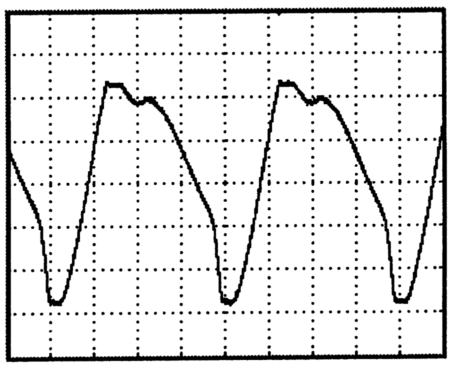


⑦



POWER

㊳



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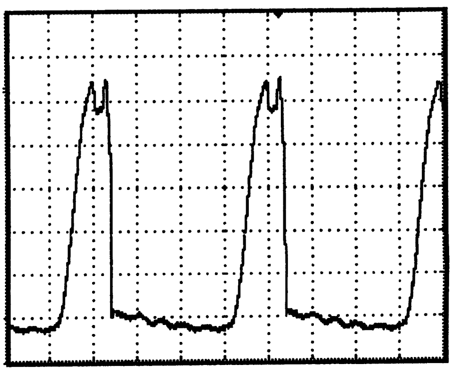
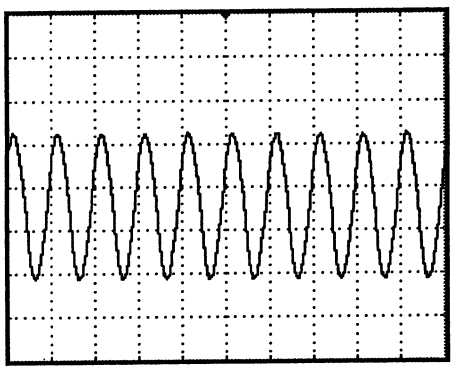


SYSCON

㊶



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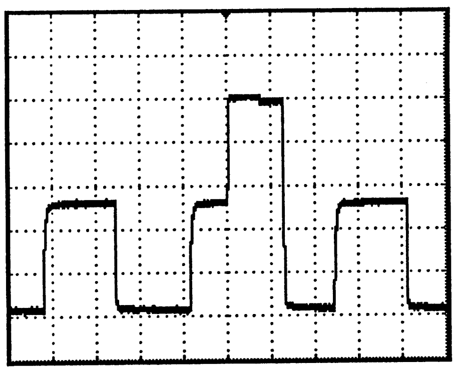

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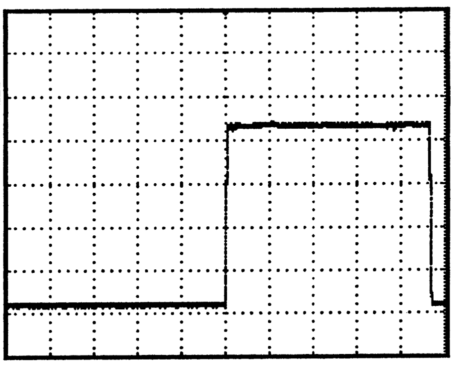

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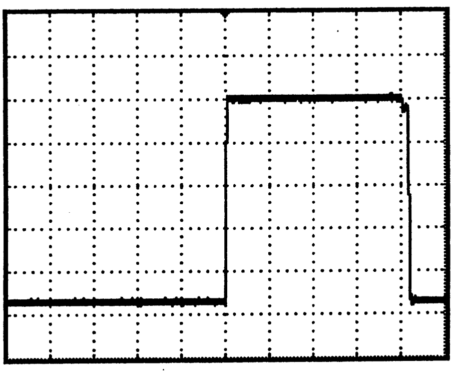

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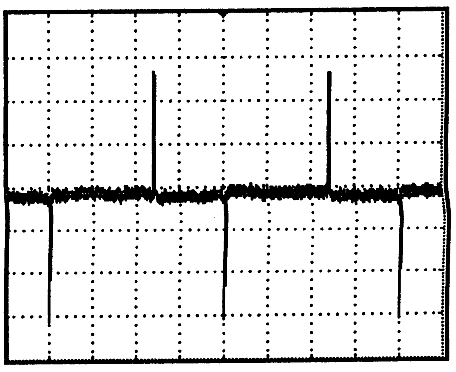

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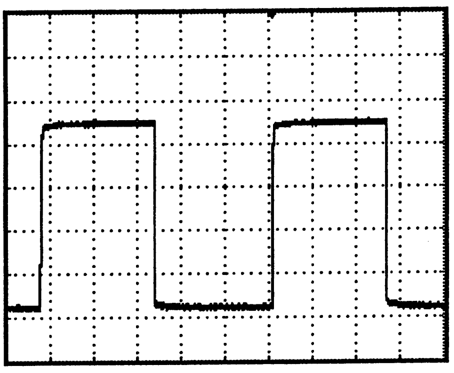

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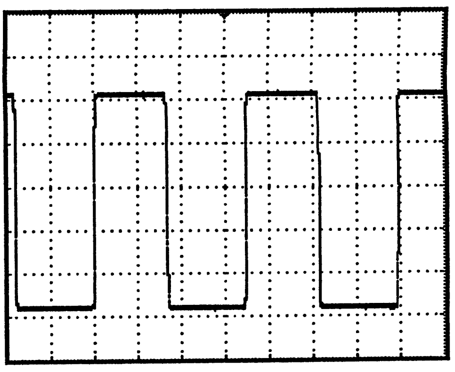
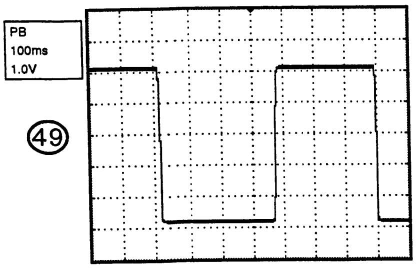
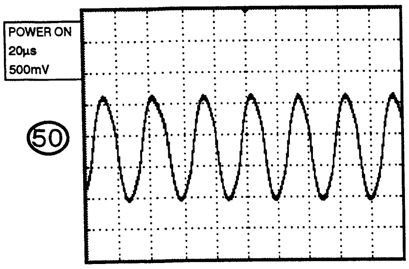


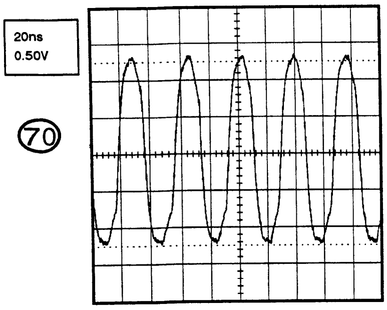
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

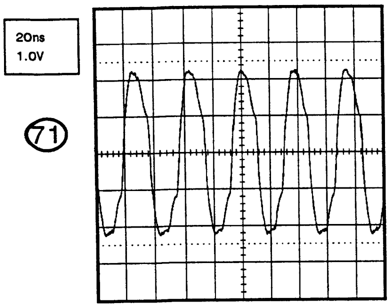
WAVEFORMS



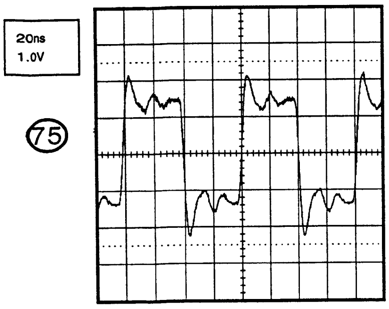


MPEG2 ENCODER

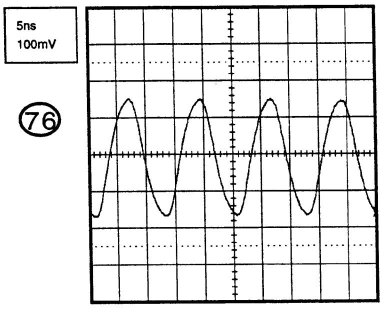




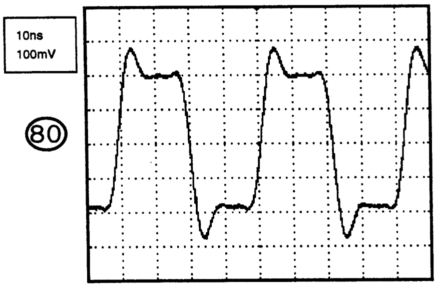
MPEG2 DECODER



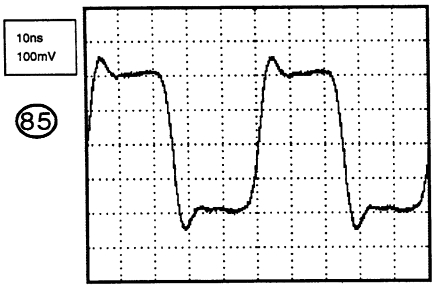
SDRAM2

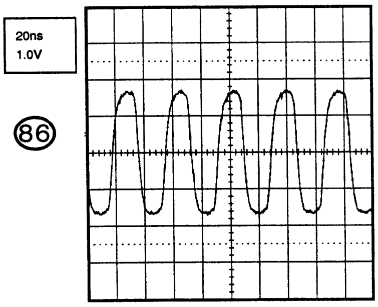


FLASH/DRAM/USB

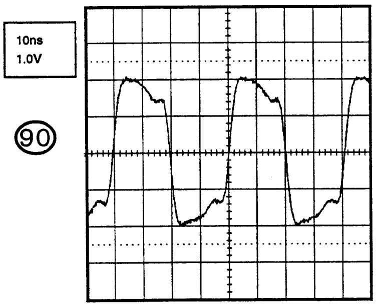


INTER FACE



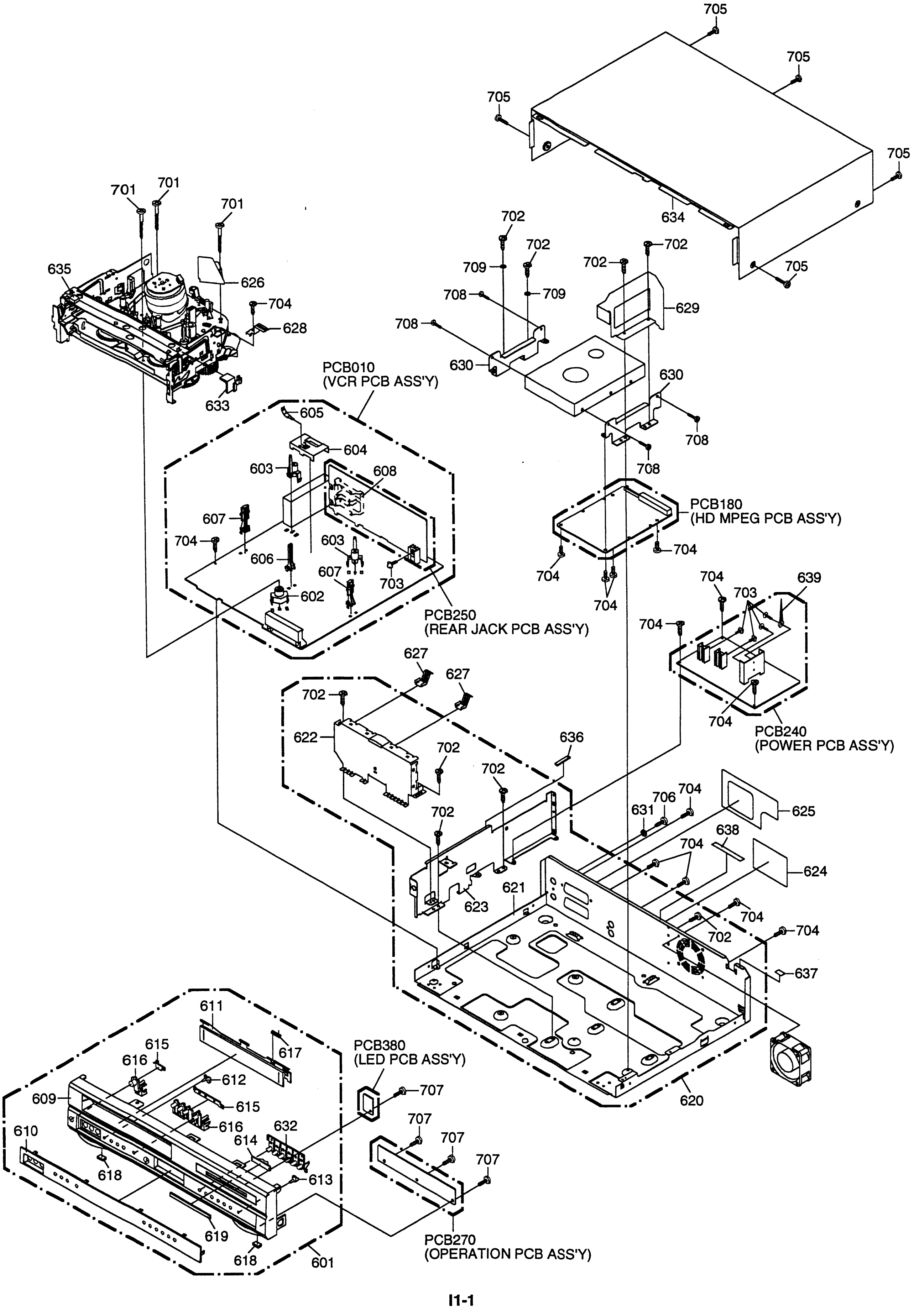


VIDEO/AUDIO

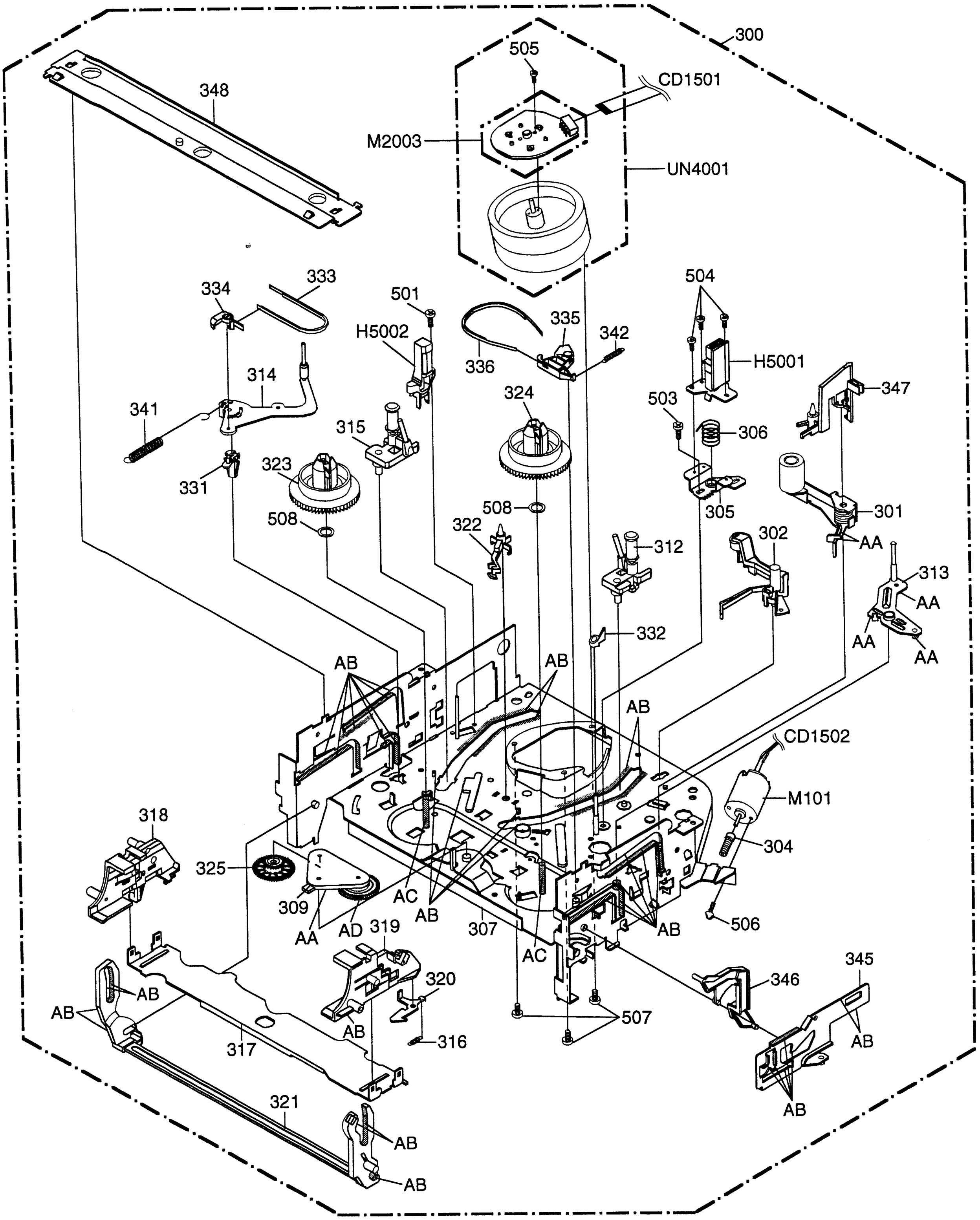


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW


705
705
705
705
705
634
701
701
701
635
626
704
628
633
702
702
709
709
708
708
630
702
702
629
630
708
708
PCB010
(VCR PCB ASS'Y)
605
604
603
608
607
704
606
603
607
703
602
PCB250
(REAR JACK PCB ASS'Y)
PCB180
(HD MPEG PCB ASS'Y)
704
704
704
704
703
639
704
704
PCB240
(POWER PCB ASS'Y)
627
627
702
622
702
636
702
702
631
706
704
625
638
704
624
621
623
704
702
704
637
620
611
617
615
616
612
615
616
609
632
614
610
618
613
619
618
601
PCB380
(LED PCB ASS'Y)
707
707
707
707
PCB270
(OPERATION PCB ASS'Y)

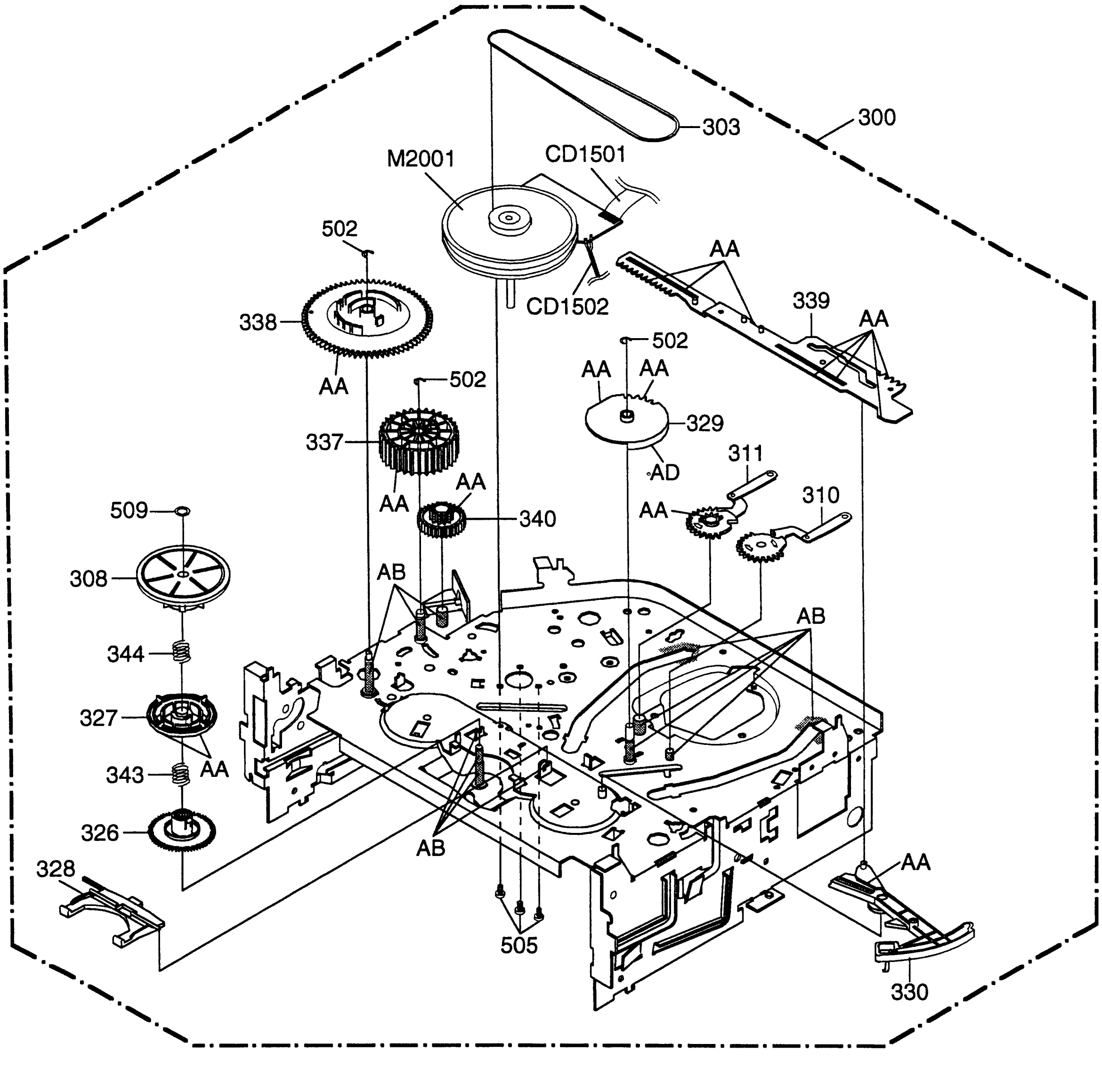
CHASSIS EXPLODED VIEW (TOP VIEW)


300
505
CD1501
348
M2003
UN4001
333
334
504
501
335
H5002
342
336
H5001
314
324
347
503
341
306
315
323
331
305
301
508
508
322
302
312
AA
313
AA
AA
AA
332
AB
AB
AB
CD1502
M101
318
304
325
AC
309
AB
307
AB
506
AA
AD
319
AC
345
346
AB
320
507
AB
AB
316
AB
317
AB
321
AB
AB

CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD

NOTE: Applying positions AA, AB, AC and AD for the grease are displayed for this section.
Check if the correct grease is applied for each position.

CHASSIS EXPLODED VIEW (BOTTOM VIEW)


303
300
M2001
CD1501
502
AA
CD1502
339
338
AA
502
AA
AA
502
AA
AA
329
337
AD
311
AA
AA
340
310
509
AA
308
AB
AB
344
327
AA
343
AB
326
328
AA
505
330

CLASS	PART NO.	MARK
GREASE	G-555G	AA
	MG-33	AB
	FG-84M	AC
	FL-721	AD

NOTE: Applying positions AA, AB, AC and AD for the grease are displayed for this section.
Check if the correct grease is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
601	A2A504A720	CABINET,FRONT ASSY	
602	701WPA0686	HOLDER,DECK	
603	701WPA0751	HOLDER,DECK	
604	752WSA0230	SHIELD,CASE HEAD AMP	
605	753WUAA006	SPRING,EARTH HEAD AMP	
606	85OP700037	HOLDER,LED	
607	85OP700038	HOLDER,END SENSOR	
608	752WSA0306	SHIELD,21PIN	
609	701WPJ1154	CABINET,FRONT	
610	711WPD0630	PLATE,DISPLAY	
611	712WPJ0786	FLAP	
612	713WPAA086	GLASS,LED-VCR	
613	713WPAA087	GLASS,LED-DVD	
614	713WPA0247	PLATE,LED	
615	738WPAA029	BUTTON,HOLDER	
616	738WPB0009	BUTTON,FRAME-VCR	
617	743WKA0042	SPRING,FLAP	
618	800WFA0051	CUSHION,LEG	
619	800WNA0007	SHEET,PC	
620	A2A504A730	CABINET,BOTTOM ASSY	
621	702WSA0160	PLATE,BOTTOM	
622	753WSA0147	SHIELD,FRONT	
623	761WSA0082	ANGLE,CENTER	
624	7222022627	SHEET,RATING	
625	7230007578	SHEET,JACK	
626	752WSA0275	COVER,AC HEAD	
627	753WUA0060	SPRING,EARTH	
628	753WUA0062	SPRING,EARTH-TOP	
629	755WNA0019	SHEET,COVER	
630	761WSA0107	HOLDER,HDD	
631	800WB00004	FIBER WASHER	7x3.2xT0.5
632	738WPB0008	BUTTON,FRAME-DVD	
633	701WPA0781	HOLDER,TOP	
634	702WSB0079	CABINET,TOP	
635	800WFAA013	CUSHION,LEG	
636	800WFA0055	CUSHION	20x5xT1
637	800WQ00070	FELT SHEET	
638	800WQ00071	FELT SHEET	
639	8995034000	CORD CLIP UL CO.	
701	8109130B94	SCREW,TAP TITE(B) R PAN	3x29
702	8109230704	SCREW,TAP TITE(B) R BIND	3x7
703	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
704	8109230804	SCREW,TAP TITE(B) BIND	3x8
705	8109K30601	SCREW,TAP TITE(B) BIND(3D)	3x6
706	8107230404	SCREW,TAP TITE(S) BIND	3x4
707	8110226804	SCREW,TAP TITE(P) BIND	2.6x8
708	8153163254	SCREW NO.6-32UNC PAN	L=5
709	82Q308010M	PVC WASHER	
---	791WHA0100	GIFT SHEET	
---	792WHA0358	PACKAGE,BACK	
---	792WHA0387	PACKAGE,FRONT	
---	793WCD1447	GIFT BOX	
---	795WCA0662	PAD,DVD/VR	155x250
---	A2A504A975	INSTRUCTION BOOK KIT	
---	JB5U0300	POLYBAG,INSTRUCTION	
---	J2A50401A	INSTRUCTION BOOK	
---	J2A50407A	QUICK SET UP SHEET	
---	J2A50429A	INFORMATION SHEET	

CHASSIS REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
300	A2A7A0E420A	DECK ASSY	A2A7A0E420A	501	8107226804	SCREW,TAP TITE(S) BIND	2.6x8
				502	83ETW30000	E-RING	3.0
301	85OA400234	PINCH ROLLER BLOCK		503	8107226404	SCREW,TAP TITE(S) BIND	2.6x4
302	85OA500026	AHC ASS'Y		504	8102120604	SCREW,PAN	M2x6
303	85OP200290	BELT,CAPSTAN (S)		505	8109126604	SCREW,TAP TITE(B) PAN	2.6x6
304	85OP600581	WORM		506	810A130404	SCREW/WASHER(A)	M3x4
305	85OP500083	BASE,AC HEAD		507	810A126504	SCREW/WASHER(A)	M2.6x5
306	85OP800324	SPRING,AC HEAD		508	82Q264713N	POLYSLIDER WASHER	2.6x4.7xT0.13
307	85OA000459	MAIN CHASSIS ASS'Y		509	82P184505N	POLYSLIDER WASHER(CUT)	1.8x4.5xT0.5
308	85OA200089	CLUTCH ASS'Y					
309	85OA200090	ARM IDLER ASS'Y		CD1501	122H071603	CORD JUMPER	SMCD-7X151
				CD1502	122Y021902	CORD JUMPER	2Y021902
310	85OA300065	LOADING ARM S UNIT		H5001	1523D91034	HEAD (AUDIO CONTROL)	HVMXA1072A
311	85OA300066	LOADING ARM T UNIT		H5002	1543D02013	HEAD (FULL ERASE)	HVFHP0032A
312	85OA400223	INCLINED BASE T UINT 3S		⚠ M101	1596S98001	MOTOR (LOADING)	MDB2B66 or
313	85OA400232	P5 ARM ASS'Y 2			1596P98001	MOTOR (LOADING)	MXN13FB12K3
314	85OA400235	TENSION ARM ASS'Y 2		⚠ M2001	1510S98036	CAPSTAN DD UNIT	F2QVB08
315	85OA400231	INCLINED BASE S UNIT		M2003	1589S11017	MICRO MOTOR	I2OAL05 or
316	85OP800358	SPRING,LOCKER			1589S11015	MICRO MOTOR	I2OAL01
317	85OP900736	CASS,HOLDER		⚠ UN4001	A2A752B500	CYLINDER UNIT ASS'Y	A2A752B500
318	85OP900748	CASS,SIDE L					
319	85OP900749	CASS,SIDE R					
320	85OP900739	LOCKER,R					
321	85OA900228	LINK UNIT					
322	85OP000496	POST,CASS GUIDE					
323	85OP200316	REEL,S (S)					
324	85OP200317	REEL,T (S)					
325	85OP200308	GEAR,IDLER					
326	85OP200311	GEAR,CLUTCH					
327	85OP200312	GEAR,COUPLING					
328	85OP200313	LEVER,CLUTCH					
329	85OP300194	GEAR,MAIN LOADING					
330	85OP400490	LEVER,TENSION					
331	85OP400492	HOLDER,TENSION					
332	85OP400520	CAP.P4					
333	85OP400542	BAND,TENSION					
334	85OP400533	CONNECT,TENSION					
335	85OP600573	ARM,BRAKE T					
336	85OP600584	BAND,BRAKE T					
337	85OP600577	CAM,PINCH ROLLER					
338	85OP600578	CAM,MAIN					
339	85OP600579	ROD,MAIN					
340	85OP600582	GEAR,JOINT					
341	85OP800322	SPRING,TENSION					
342	85OP800360	SPRING,BRAKE T					
343	85OP800355	SPRING,COUPLING					
344	85OP800356	SPRING,RING					
345	85OP900750	LEVER,LINK 2					
346	85OP900744	LEVER,FLAP					
347	85OP900745	CASS,OPENER					
348	85OP900746	BRACKET,TOP 3V					

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
RESISTORS			
⚠ R502	R3X181R82J	R,METAL OXIDE	0.82 OHM 1W
⚠ R504	R3X181561J	R,METAL OXIDE	560 OHM 1W
⚠ R512	R3X18A823J	R,METAL OXIDE	82K OHM 2W
⚠ R516	R63581R22J	R,FUSE	0.22 OHM 1W
⚠ R517	R65584561J	R,FUSE	560 OHM 1/4W
⚠ R1704	R6358A100J	R,FUSE	10 OHM 2W
⚠ R1722	R3X18A010J	R,METAL OXIDE	1 OHM 2W
⚠ R1741	R655U2R22J	R,FUSE	0.22 OHM 1/2W
CAPACITORS			
C501	E02L03222M	CE	2200 UF 25V
⚠ C502	P2122B104M	CMP	0.1 UF 275V ECQUL or
	P2472B104M	CMP	0.1 UF 275V PHE840
C511	E62RFH101M	CE	100 UF 400V
C515	C0JFE0514M	CC	0.01 UF 500V E
⚠ C516	CD39E0MQ3M	CC	0.0047UF 250V
C518	E62F01222M	CE	2200 UF 10V
C519	E62F01152M	CE	1500 UF 10V
C525	C0PLRR7H2K	CC	220 PF 2KV RR or
	C03L0R7H2K	CC	220 PF 2KV R
DIODES			
D1	DDDRL41480	DIODE,SILICON	MCL4148
D101	D1VT001330	DIODE,SILICON	1SS133T-77
D103	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D502	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D503	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D505	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D506	D2WTRM11C0	DIODE,SILICON	RM11C-EIC
⚠ D507	D23TGP15J0	DIODE,SILICON	RGP15J-G23
⚠ D508	D23T0UG2D0	DIODE,SILICON	UG2D-G23
D509	D2WXGP10K0	DIODE,RECTIFIER	RGP10K-EIC
⚠ D510	D97U02701B	DIODE,ZENER	MTZJ27B T-77
⚠ D513	D230PF6DT0	DIODE,SILICON	FEPF6DT
⚠ D515	D2LKB340L0	DIODE,SCHOTTKY	SB340L-6737
⚠ D518	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D522	D28TELS6N6	DIODE,RECTIFIER	10ELS6N-TA1B2
⚠ D523	D97U03301B	DIODE,ZENER	MTZJ33B T-77
D524	D1VT001330	DIODE,SILICON	1SS133T-77
⚠ D529	D23TGP15J0	DIODE,SILICON	RGP15J-G23
D530	D28TELS6N6	DIODE,RECTIFIER	10ELS6N-TA1B2
D531	D97U01201B	DIODE,ZENER	MTZJ12B T-77
D651	0021E2Q140	LED	LTL-1CHEE-002A
D681	0021E2Q140	LED	LTL-1CHEE-002A
D685	002166T010	LED	SELU5E20C-TP15
D1701	D97U01301B	DIODE,ZENER	MTZJ13B T-77
D1702	D1VT001330	DIODE,SILICON	1SS133T-77
D1704	D1VT001330	DIODE,SILICON	1SS133T-77
D1705	D1VT001330	DIODE,SILICON	1SS133T-77
D1706	D97U01001B	DIODE,ZENER	MTZJ10B T-77
D1707	D1VT001330	DIODE,SILICON	1SS133T-77
D1708	D1VT001330	DIODE,SILICON	1SS133T-77
D1709	D2WXN40050	DIODE,SILICON	1N4005-EIC
D1711	D97U03R31B	DIODE,ZENER	MTZJ3.3B T-77
D1712	D1VT001330	DIODE,SILICON	1SS133T-77
D1714	D2WXN40050	DIODE,SILICON	1N4005-EIC
D3001	0010100320	INFRARED LED	LNA2702L010R
D3007	D1VT001330	DIODE,SILICON	1SS133T-77
D3009	D1VT001330	DIODE,SILICON	1SS133T-77
D8005	D97U04R71B	DIODE,ZENER	MTZJ4.7B T-77
D8201	D1VT001330	DIODE,SILICON	1SS133T-77
D8202	D1VT001330	DIODE,SILICON	1SS133T-77
ICS			
IC1	ICXK0P2010	IC	NCP201ETS-208QP
IC2	I5CJ031250	IC	SN74CBT3125PW
IC6	ICWJ064326	IC	W986432DH-6
IC7	ICWJ064326	IC	W986432DH-6
IC9	I5QJ016007	IC	MBM29LV160TE-70PFTN-00
IC11	ICPF038050	IC	IDT49FCT3805PY
IC13	ICPF089150	IC	IDT74FCT388915T
IC16	ICXK0P2020	IC	NCP202DTS-208QP
IC17	ICWJ016166	IC	W981616BH-6
IC18	I55F0U04F0	IC	TC7SHU04FU
IC19	I55F0U04F0	IC	TC7SHU04FU
IC20	I55F0U04F0	IC	TC7SHU04FU
IC22	IF5J016R65	IC	MT4LC4M16R6TG-5
IC23	I9UF0598I0	IC	PST598INR
IC24	I17F017000	IC	PLL1700E
IC25	ICBF096040	IC	USBN9604-28MX
IC26	ICXK0P2040	IC	NCP204IF3A-208QP
IC28	I56F023200	IC	M62320FP
IC30	I17F018000	IC	PCM1800E
IC31	I5OK071130	IC	SAA7113H
IC35	I0IF071260	IC	SAA7126H
IC36	I17F017280	IC	PCM1728E
IC48	ICWJ0L257B	IC	W24L257AQ-12
IC49	I5HJ008AF0	IC	S-24C08AFJA-TB-01
IC54	I5CJ0T5740	IC	SN74AHCT574PWR
IC55	I5CJ0C5410	IC	SN74AHC541PWR
IC56	I5CF01G320	IC	SN74AHC1G32DCKR
IC101	I04F38217F	IC	HA118217F
⚠ IC501	I1KJ9A4310	IC	KIA431
⚠ IC502	I1KA97812A	IC	KIA7812API
⚠ IC503	0002E00610	PHOTO COUPLER	LTV-817M-VB
IC701	I0KF79605H	IC	TDA9605H
IC801	I0KFA9873H	IC	TDA9873H
IC1701	I03F6324N0	IC	LA6324NML-TE-L
IC3001	I54F50127A	IC	OEC0127A
IC3003	I9UF032310	IC	PST3231NR
IC3099	A2A504A015	IC	S-24C08ADPA-01
IC4502	I0QF02283V	IC	NJM2283V
IC8002	I0UF014430	IC	MM1443XJ
IC8201	ICKF0031A0	IC	ET-TVT031A
IC8202	I03F647930	IC	LC74793/JM
IC8301	I00F006900	IC	CXA2069Q
IC8302	I03S072100	IC	LA7210
IC8303	I0QF045800	IC	NJM4580M
TRANSISTORS			
Q101	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q102	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q103	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146
Q104	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q105	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q106	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q107	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q115	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q116	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q117	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠ Q501	T410K26470	FET	2SK2647-01MR
⚠ Q502	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
⚠ Q503	TBA0013660	TRANSISTOR,SILICON	KTB1366(O,Y)
⚠ Q504	TB3T011310	TRANSISTOR,SILICON	2SB1131(S,T)-AE
⚠ Q505	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q506	TNATA03002	COMPOUND TRANSISTOR	KRC101MAT
Q651	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q652	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q653	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q654	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q655	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q656	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q657	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q658	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q659	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q660	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q661	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q662	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q663	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q664	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q665	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q666	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q669	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
⚠ Q1701	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
⚠ Q1702	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q1703	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q1704	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
⚠ Q1705	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q1707	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q1708	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠ Q1709	TCA0043690	TRANSISTOR,SILICON	KTC4369(O,Y)
Q1710	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
⚠ Q1713	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT
Q1714	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
⚠ Q1715	TAAT01281Y	TRANSISTOR,SILICON	KTA1281_Y
Q1716	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
⚠ Q1717	TAAT01281Y	TRANSISTOR,SILICON	KTA1281_Y
Q1718	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		
		TRANSISTORS		
⚠ Q1719	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT	
⚠ Q1721	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT	
Q3001	0002700690	PHOTO COUPLER	RPI-303	
Q3002	0002700690	PHOTO COUPLER	RPI-303	
Q3003	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q3004	0002700680	PHOTO COUPLER	RPI-352C40N	
Q3005	0002700680	PHOTO COUPLER	RPI-352C40N	
Q3006	0000M00390	PHOTO TRANSISTOR	ST-304L	
Q3007	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q3008	0000M00390	PHOTO TRANSISTOR	ST-304L	
Q3009	TNYJW05001	COMPOUND TRANSISTOR	DTC124TKAT146	
Q3010	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146	
Q4503	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q4504	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8201	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT	
Q8202	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8203	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8204	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q8205	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8206	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8208	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK	
Q8211	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8212	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8301	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q8302	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q8303	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8304	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8305	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK	
Q8308	TPAAA05001	COMPOUND TRANSISTOR	KRA101SRTK	
Q8309	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK	
Q8310	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146	
Q8311	TNYJA05001	COMPOUND TRANSISTOR	DTC143EKAT146	
		COILS &TRANSFORMERS		
L101	0316160028	COIL,BIAS OSC	1616002	
L102	02167F101J	COIL	100 UH	
L103	02167F101J	COIL	100 UH	
L104	031616004R	COIL,BIAS OSC	1616004	
L105	02167F220J	COIL	22 UH	
L106	02167F101J	COIL	100 UH	
L107	0216A6R22K	COIL	0.22 UH	or
	021LA6R22M	COIL	0.22 UH	
L108	0216A6R22K	COIL	0.22 UH	or
	021LA6R22M	COIL	0.22 UH	
L109	0216A6R22K	COIL	0.22 UH	or
	021LA6R22M	COIL	0.22 UH	
L110	02167F101J	COIL	100 UH	
L111	0216A6221K	COIL	220 UH	or
	021LA6221K	COIL	220 UH	
L112	0216A6120K	COIL	12 UH	or
	021LA6120K	COIL	12 UH	
L113	02167F220J	COIL	22 UH	
L114	0216A6390K	COIL	39 UH	or
	021LA6390K	COIL	39 UH	
L115	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L116	02167F101J	COIL	100 UH	
L301	02167F220J	COIL	22 UH	
⚠ L501	029T0000A1	COIL,LINE FILTER	0R7A223F24	
L502	02AHB0A0A4	CORE,FERRITE	W5T_20*10*10A	
L503	02167E100K	COIL	R6-1 10 UH	
L505	02167F100J	COIL	10 UH	
L506	02167E100K	COIL	10 UH	
L507	02167E100K	COIL	10 UH	
L651	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L652	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L701	02167F101J	COIL	100 UH	
L702	02167F101J	COIL	100 UH	
L802	02167F220J	COIL	22 UH	
L3001	0216A6101K	COIL	100 UH	
L3002	0216A6101K	COIL	100 UH	
L3003	0216A6120K	COIL	12 UH	or
	021LA6120K	COIL	12 UH	
L4501	0216A6100K	COIL	10 UH	
L4507	0216A6220K	COIL	22 UH	
L4511	0216A6100K	COIL	10 UH	

REF. NO.	PART NO.	DESCRIPTION		
		COILS &TRANSFORMERS		
L8001	02167F101J	COIL	100 UH	
L8202	02167F100J	COIL	10 UH	
L8203	02167F100J	COIL	10 UH	
L8204	02167F101J	COIL	100 UH	
L8205	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L8207	0216A6100K	COIL	10 UH	or
	021LA6100K	COIL	10 UH	
L8301	02AHB9A972	CORE,FERRITE	W5T29X7.5X19	
L8302	02167F470J	COIL	47 UH	
L8303	0216A61R8K	COIL	1.8 UH	
L8304	02167F101J	COIL	100 UH	
⚠ T501	0481291064	TRANSFORMER,SWITCHING	81291064	
		JACKS		
J651	060J421023	RCA JACK	MSP-281V3-A	
J652	060J401080	RCA JACK	MSP-281V1-B	
J653	060J401079	RCA JACK	MSP-281V4-B	
J4501	060J411020	RCA JACK	MSP-242V2-01PBSN	
J8001	063G100035	SOCKET,21PIN	035_0_5363_00	
J8002	063G100035	SOCKET,21PIN	035_0_5363_00	
		SWITCHES		
SW651	0504101T34	SWITCH,TACT	EVQ21505R	
SW652	0504101T34	SWITCH,TACT	EVQ21505R	
SW653	0504101T34	SWITCH,TACT	EVQ21505R	
SW654	0504101T34	SWITCH,TACT	EVQ21505R	
SW655	0504101T34	SWITCH,TACT	EVQ21505R	
SW681	0504201T32	SWITCH,TACT	SKQNAED010	
SW682	0504201T32	SWITCH,TACT	SKQNAED010	
SW684	0504201T32	SWITCH,TACT	SKQNAED010	
SW686	0504201T32	SWITCH,TACT	SKQNAED010	
SW688	0504201T32	SWITCH,TACT	SKQNAED010	
SW690	0504201T32	SWITCH,TACT	SKQNAED010	
SW3001	0508S11001	SWITCH (LEAF)	LSA-1144EAU	or
	0508A11001	SWITCH(LEAF)	MXS01350MVP0	
		P.C.BOARD ASSEMBLIES		
PCB010	A2A504A010	PCB ASS'Y	VMB271A	
PCB180	A2A504A180	PCB ASS'Y	VMA241B	
PCB240	A2A504A240	PCB ASS'Y	VPA152C	
PCB250	A2A504A250	PCB ASS'Y	VEB995A	
PCB270	A2A504A270	PCB ASS'Y	VEA970C	
PCB380	A2A504A380	PCB ASS'Y	VEA971C	
		MISCELLANEOUS		
B501	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2	
B503	024HT03564	CORE,BEADS	W4BRH3.5X6X1	
BT601	141L003010	BATTERY,MANGAN	R6P(AR)XICI	
CN1	069S250639	CONNECTOR PCB SIDE	A2001WR2-5P	
CD20	06CUJB0301	CORD,CONNECTOR	CUJB0301	
CN11	069EVET011	CONNECTOR PCB SIDE	04_6232_114_102_800	
CN20	06A9604020	CONNECTOR PCB SIDE	LPHS-40R-B-032	
CN25	069S2D0639	CONNECTOR PCB SIDE	A2001WR2-13P	
CD102	122F061501	CORD,JUMPER	2F061501	
⚠ CD501	1206459804	CORD,AC BUSH	6459804	
CD502	122Y0G1701	CORD,JUMPER	2Y0G1701	
CD504	06CU641501	CORD,CONNECTOR	CU641501	
CD601	06CDVA5003	CABLE,21PIN	S-1002B	
CD651	122H072504	CORD,JUMPER	2H072504	
CP101	0697290620	CONNECTOR PCB SIDE	TOC-C09X-A1	
CP102	069J760029	CONNECTOR PCB SIDE	IMSA-9604S-06Z14	
CP103	0697120320	CONNECTOR PCB SIDE	TMC-T02X-E1	
CP502	067U016019	WIRE HOLDER	B2013H02-16P	
CP504	069V140339	CONNECTOR PCB SIDE	A2544WV2-4P	
CP506	069S220629	CONNECTOR PCB SIDE	A2001WV2-2P	
CP651	069J770019	CONNECTOR PCB SIDE	IMSA-9604S-07Z13	
CP681	069R770479	CONNECTOR PCB SIDE	52492-0720	
CD4502	122H0C1201	CORD,JUMPER	2H0C1201	
CD6002	06CDL02002	RF CABLE PAL FTZ	CDL02002	
CD8301	122S0E2801	CORD,JUMPER	2S0E2801	
CD8302	06CU2D2501	CORD CONNECTOR	CU2D2501	
CP1701	069R2G0589	CONNECTOR PCB SIDE	52147-1610	
CP3001	06972C0010	CONNECTOR PCB SIDE	TMC-J12P-B2	
CP4501	069J1B0038	CONNECTOR PCB SIDE	IMSA-9130B-11	
CP4502	069J7C0029	CONNECTOR PCB SIDE	IMSA-9604S-12Z14	
CP4503	069J1F0038	CONNECTOR PCB SIDE	IMSA-9130B-15	
CP8001	069J1B0048	CONNECTOR PCB SIDE	IMSA-9130S-11L	
CP8002	069J7C0019	CONNECTOR PCB SIDE	IMSA-9604S-12Z13	
CP8003	069J1F0048	CONNECTOR PCB SIDE	IMSA-9130S-15L	
CP8301	069JVE0180	CONNECTOR PCB SIDE	IMSA-9615S-14C-P	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
		MISCELLANEOUS	
CUS180	800WFAA006	CUSHION A	
CUS811	800WFAA006	CUSHION A	
EMI1	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI2	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI3	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI4	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI5	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI7	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI8	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI9	0246C33313	CORE,BEADS	MPZ2012S331AT
EL001	124120301A	EYE LET	XRY20X30BD
EMI10	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI13	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI15	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI16	0246C33313	CORE,BEADS	MPZ2012S331AT
EMI25	0246C33313	CORE,BEADS	MPZ2012S331AT
⚠ F501	080NT04004	FUSE	50T040H or
	080NT04003	FUSE	50T040HCC
FH501	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	06710T0006	HOLDER,FUSE	EYF-52BC
HD1	162R01004A	HDD	4R080L0
M501	1519456L02	FAN MOTOR	D06T-12TS16 01
OSC1	100WT02707	CRYSTAL	FXO-31FL
OSC2	100WT02409	CRYSTAL	FXO-31EL
OSC3	100WT02002	CRYSTAL	FXO-31FL
OSC4	100WT02408	CRYSTAL	FXO-31FL
OS651	077Q037001	REMOTE RECEIVER	PIC-37043LO
RM1	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM2	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM3	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM4	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM6	110N4103M3	R,NETWORK	CAY16-103-J-4R
RM7	110N4103M3	R,NETWORK	CAY16-103-J-4R
RM8	110N4103M3	R,NETWORK	CAY16-103-J-4R
RM10	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM11	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM14	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM15	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM16	110N4100M3	R,NETWORK	CAY16-100-J-4R
RM17	110N4473M3	R,NETWORK	CAY16-473-J-4R
RM19	110N4473M3	R,NETWORK	CAY16-473-J-4R
RM20	110N4473M3	R,NETWORK	CAY16-473-J-4R
RM21	110N4473M3	R,NETWORK	CAY16-473-J-4R
RR23	R002T4471J	RC	470 OHM 1/4W
TM601	076D0FY010	TRANSMITTER	ORV202N43010
TU301	0162K01029	RF UNIT	TCMB0601PD13D
V651	0040F94006	LED DISPLAY	ELF-4M6-1SDRVGWB
X101	100CT4R407	CRYSTAL	HC-49/U
X802	100CT4R009	CRYSTAL	HC-49/U
X3001	100CT01002	CRYSTAL	HC-49/U-S
X3002	100DA32R01	CRYSTAL	DT-26
X3003	100CT01701	CRYSTAL	HC-49/U-S
X8201	100CT01302	CRYSTAL	HC-49/U-S
X8301	1002A0R503	CERAMIC OSCILLATOR	CSB500E5

RESISTOR

RC.................... CARBON RESISTOR

CAPACITORS

CC.................... CERAMIC CAPACITOR
CE.................... ALUMI ELECTROLYTIC CAPACITOR
CP.................... POLYESTER CAPACITOR
CPP.................. POLYPROPYLENE CAPACITOR
CPL.................. PLASTIC CAPACITOR
CMP.................... METAL POLYESTER CAPACITOR
CMPL................ METAL PLASTIC CAPACITOR
CMPP................ METAL POLYPROPYLENE CAPACITOR

SPEC.NO.	M2A5-04A
O/R NO.	W2Y2503